PC
The Independent Guide to IBM Personal Computers
Volume 1 Number 5 . $4.00

Inside the IBM Personal Computer, Plus. . . .

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SPECIAL EDITION: PC Product Guide

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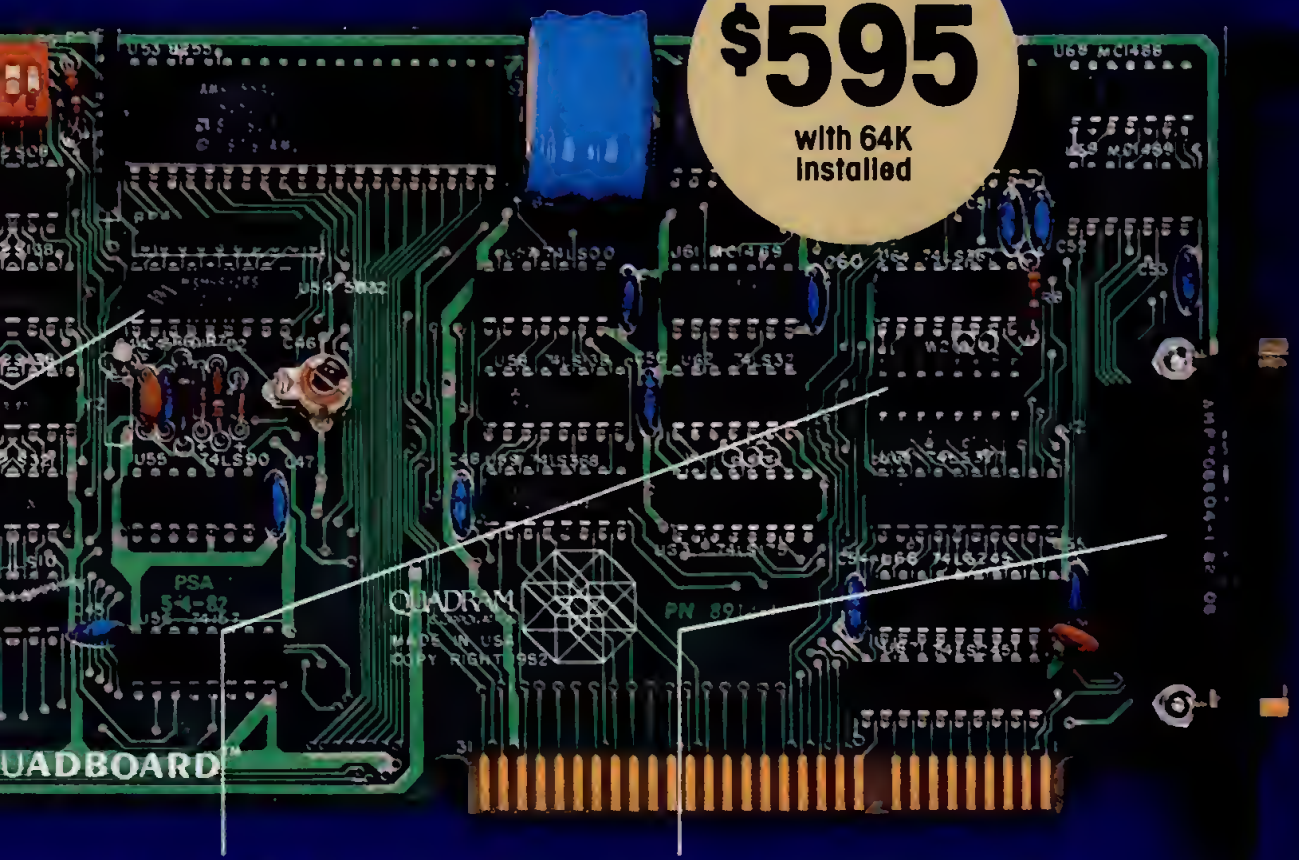

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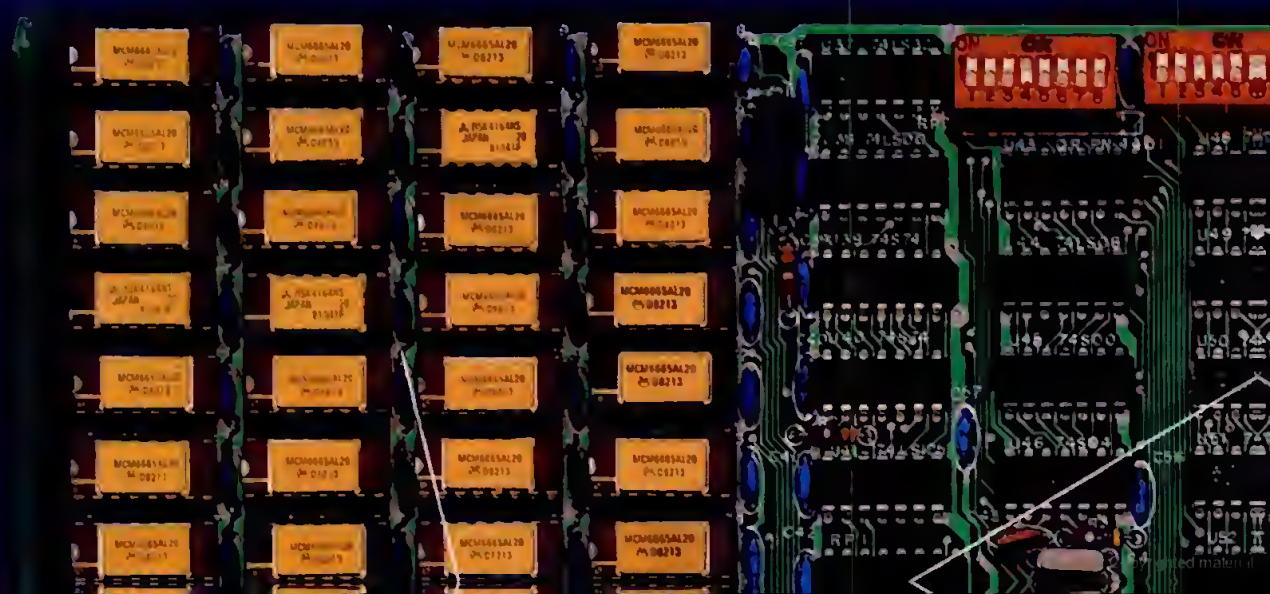

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The Independent Guide to IBM Personal Computers

Volume 1 Number 5
September 1982

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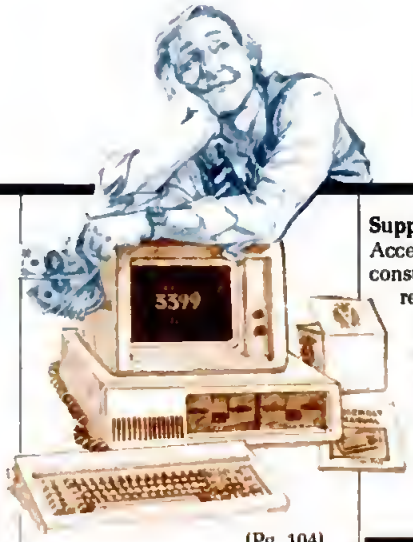

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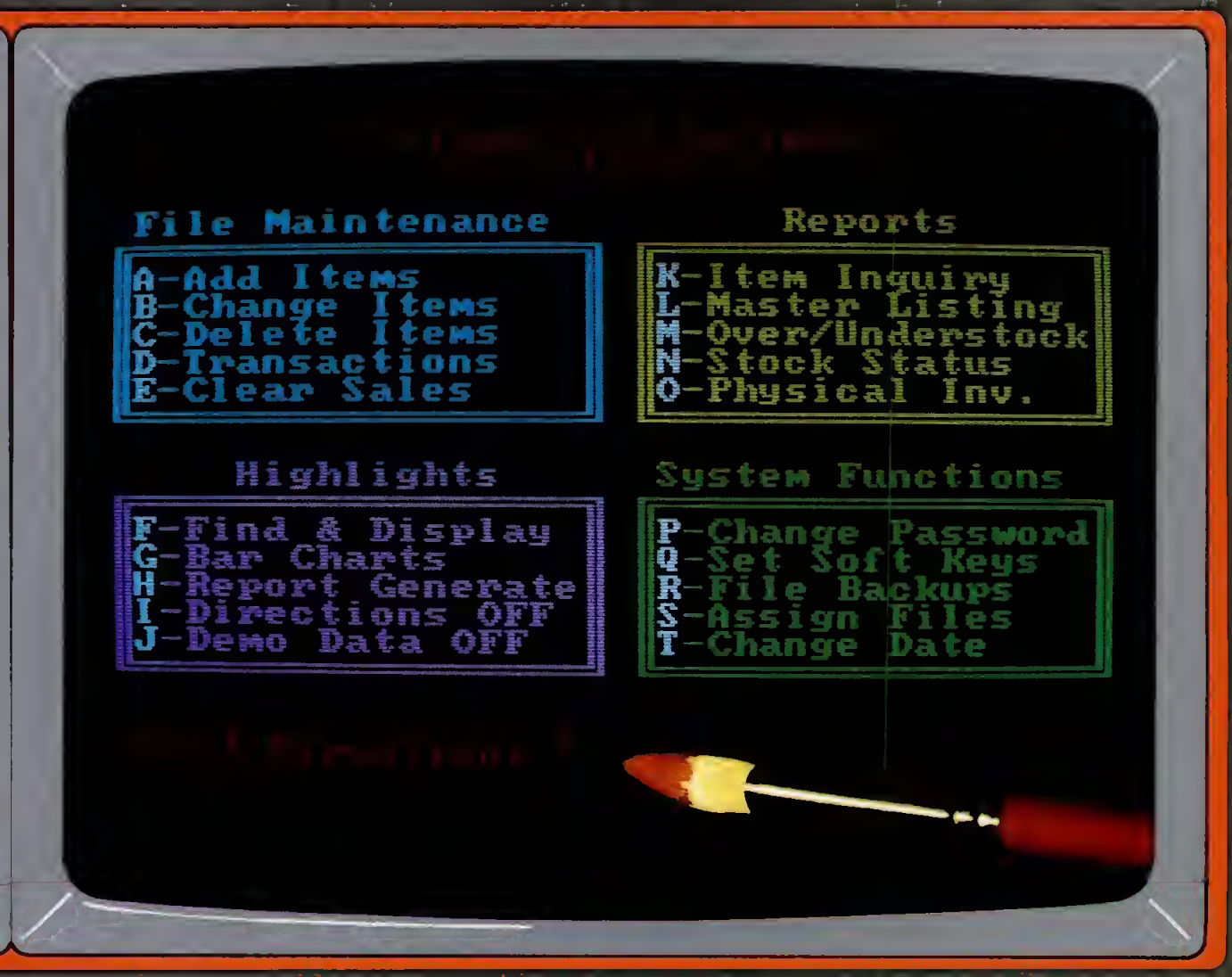

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Letters To PC

Setting the Record Straight

I read with great distress "PC Dealer Network: Growing or Shrinking?" in the August PCommuniques and would like to set the record straight.

Your report of "rumors" that IBM will not renew its dealer contract with ComputerLand when that agreement expires in August is totally inaccurate and unfounded. I am very disappointed that a responsible magazine chose to publish this unsupported speculation.

Had PC staff called us or ComputerLand, they would have been informed that the rumor was unfounded. IBM is quite satisfied with the customer service and support provided by ComputerLand dealers, and IBM's agreement with ComputerLand Corp. is a continuing one that does not require renewal on an annual or any other schedule.

Your readers should have the opportunity to know that the IBM Personal Computer will continue to be sold in ComputerLand stores and they need not rely on "rumors" for information.

Philip D. Estridge
IBM
Boca Raton, Florida

We regret any misunderstanding that may have arisen from this report. In the future we will be more diligent in checking reports. —D.B.

Epson Heartache

After receiving my PC, I also purchased your PC. For my money, your PC is well worth the investment.

I want to offer a tip for novices, like myself, who are about to purchase a printer. I recently purchased an Epson MX-80 with Graftrax upon the well-meaning advice of a friend who said, "It's the same as IBM's only better." Wrong.

The number of lines per page is not the same, and when I ran my IBM sample calendar program on my new printer, it looked like gibberish. Alas, after much heartburn and many phone calls it was determined that for their own printer IBM does alter Epson's programs.

Two facts relative to IBM PC and Epson printers should be brought to the novice's attention: to incorporate friction feed on the IBM printer it must be modified through hardware; an Epson printer must be modified through software to be compatible with IBM's ASCII codes above 155 on a one-to-one basis.

Being new to computers, I would have chosen the first option had I known all Epson's/IBM's are not equal.

Eugene L. Preece
Renton, Washington

Foreshadow

I'm enjoying PC. I especially want to thank you for the insightful comments in "Product Reports" (PC, June/July, 1982) concerning WordStor for the IBM PC. I have been using an IBM PC for word processing with EasyWriter, but I am disappointed with the hardware/software combination.

Obviously no single buyer can compare all the software programs for word processing. I think your magazine could do a great service by providing in-depth comparisons.

I sincerely hope that you will have the courage to rate available programs realistically. I'm looking forward to future issues of your magazine. Keep up the good work.

Lawrence Stern
Los Angeles, California

Consumer's Lament

I purchased my PC at the end of April and have not heard a word from IBM. I have received no announcements of new products, updates about products I own, nor any information supportive to the productive use of my PC. In a business in which information is of the essence, I find this lack of communication deplorable. My information sources are PC, *Infoworld*, other users, rumors, gossip, and downright lies. I trust IBM does not relate to the purchasers of mainframes in the same way.

I'm sure it is new for IBM to be selling directly to consumers who are not computer professionals. But it seems that the success of the PC and similar future products will hinge on doing that well. IBM has a lot to learn.

David P. Collin
Walnut Creek, California

Swimming in Brochures

Having been set on buying the ever-popular Apple microcomputer, I am glad I finally came to my senses about the IBM PC. After swimming in brochures on microcomputers, I found your magazine to be a great source on the IBM PC. Having gone cover to cover on PC's third issue, I would love to have the first two issues.

Robert Yum
Wyckoff, New Jersey

Apparently, 60,000 other readers have also come to their senses over the contents of PC because we have sold every back issue and then some. It is still possible, however, to obtain a subscription beginning with our third issue (June/July). —Ed.

PC and the Holy Grail

I subscribed to PC because I was interested in getting a PC. But you guys are hard to

Letters To PC

take. As my wife says, "Don't sprain your wrist patting yourself on the back." The magazine is decent enough, but this attitude of "Nya, nya, I've got the only Buck Rogers ray gun on the block" is just too much. True, the PC is new and much is unexplored, hut you don't have to go on like you just discovered fire.

I have a TRS-80 Mod I, and I'll be the first to admit IBM would have to blunder pretty badly to do worse than Tandy/Radio Shack. Granted, the Mod I is mature to the point of obsolescence, but hey fellas, a machine's success and ultimate power is as much a matter of serendipity as it is good original design. For all that the engineers may have planned and schemed, bugs like the division problems of PC BASIC or the sheer overweight of the Apple III still occur.

PC comes from a good family, but it's still the new kid on the block. Your deification makes the PC sound like the Holy Grail. But perhaps you're pushing its possession rather than its use. Gotta do better, guys.

Stewart Dean
Lake Hill, New York

Old Timer, New Love

As one of the first in my area to do custom programming and software development, I consider myself an old timer with the IBM PC. I am impressed with your publication. I wish IBM had done as thorough a job as you have—the machine would be much better. It's a good machine, if only the Pascal did what they told me it would do, which is why I bought it. And if only *EasyWriter* was not so hard. But to get back to the subject at hand, I am very very glad to have a magazine to go with my IBM PC. I've learned a lot, and hope to learn more. Your programs are very good, and your articles are excellent. I hope you can continue the good work, because I am learning more about my IBM PC from you than from most other sources.

Keep up the good work. I don't really see how you can improve on a nearly perfect magazine, but keep trying.

Bill
Source: TCK496

Engineer's Appeal

In reference to A. Dean Lynn's letter "No Computerese, Please" (PC, June/July, 1982), please also remember that the IBM PC will appeal to engineers as well as novices. It would be a shame to let the technical content of the magazine suffer at the request of the computer neophyte.

Harold H. Fink
Arnold, Maryland

We will do our best to satisfy the needs of neophytes and techies alike. —Ed.

Second-Hand Charmer

I have been considering the options for a letter-quality printer for some time now. After much thought, I opted for a reconditioned Anderson Jacobson AJ832 daisy wheel terminal for less than $1,000.

With the assistance of technical people, I designed the necessary cable to attach to the PC's serial RS-232 port. It appears there is really no such thing as a "standard" RS-232 connection. I proceeded to reconfigure the *EosyWriter* program to print to the serial port.

Much to my amazement, I actually got something to print. However, there was a problem with carriage controls (line feeds, returns, form feeds) not being accepted properly. After repeated calls to the terminal manufacturer (AJ), the PC company (IBM), and my local dealer (ComputerLand), no one was able to solve the problem.

At this point I decided to try one last call to the software company (Information Unlimited). They very quickly and courteously solved the problem by understanding that the control and escape codes necessary to drive my printer were in fact closest to those on the IBM (Epson) Printer. Now everything works like a charm.

I am writing this letter to PC becau you have severely taken the *EosyWri* software to task. I feel they deserve cr and my heartfelt thanks for an outstanc job in supporting their product.

Robert A. Berni
Ardsley, New Y

Puzzled Purchaser

Your magazine (PC, June/July, 1982) i well done and informative, yet quite p zling. I subscribed to it because I am in ested in purchasing a microcomputer. However, with the exception of the ac pages 2 and 3, none of the ads tells m where to buy an IBM PC nor the cost various system configurations. Many your readers may not be owners, but p spective owners.

Joe
Redwood Valley, Califo

The IBM PC con be purchosed *from I* ComputerLund, Seors Business Cente und other selected distributors.—Ed.

Communication Mystery

Your magazine is the best means I ha encountered for IBM PC owners to k up with the many developments in PC hardware and software. I was particul pleased to find solutions to some com nications problems in the June/July is The area of communications has beer somewhat of a mystery to me. I hope ture issues will present articles that o line the processes and structures invol in communications activities.

James E. Gehrm
Sacramento, Califo

An in-depth survey of communicotio systems has been scheduled for PC, N vember 1982. —Ed.

PC welcomes letters from readers. W to Letters, PC, *1528 Irving St., San Fr* cisco, *CA 94122. Letters published m* be edited.

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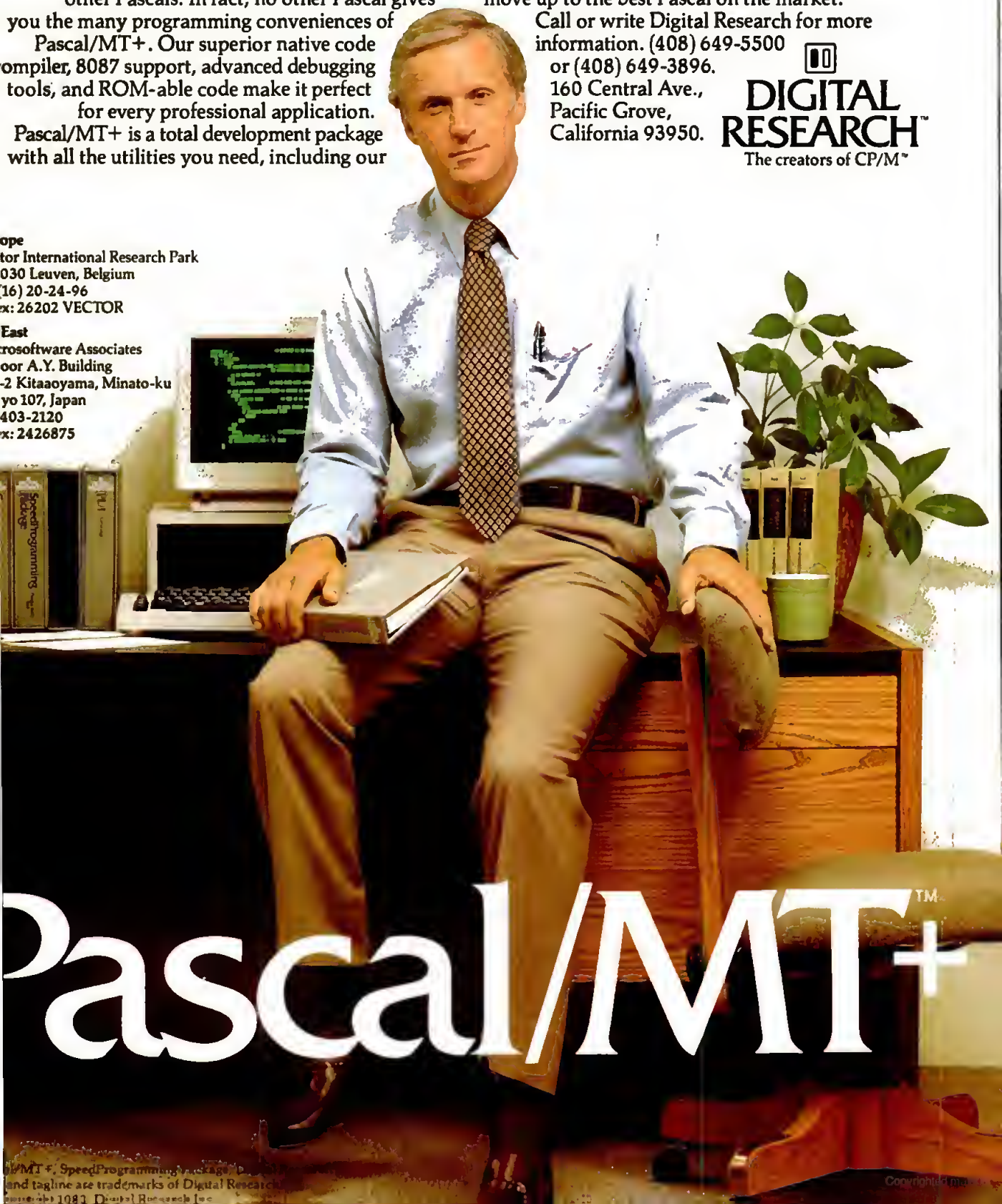

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AVID BUNNELL

When Wildly Optimistic Isn't Enough

Back in the early days of personal computing (July 1975), in my capacity as itor of Computer Notes, I interewed a daring young fellow, ick Heiser, who a few weeks earr had opened the world's first mputer store.

Heiser's storefront, located in a amy section of Los Angeles, was lled simply "The Computer ore." He sold the only micromputer then available, the Alr from MITS. Heiser also proded software "information" (the al thing hardly existed), and he ened his doors at night for comter hobbyist meetings.

Heiser reported that business as very brisk, that in fact it was uch better than he had ever agined. "People in this business ven't been optimistic enough," said. "I've tried to be as optistic as possible but that has rned out to be too conservative. u have to be wildly optimistic."

During the past 7 years, as I ve observed and participated in e unfolding events that shape rsonal computing, I've often ought of Heiser's pronouncent.

In the spring of 1977, for inance, when within a few days of each other, Commodore anunced the PET computer, Apple announced the Apple II, and dio Shack announced the TRS-80, I remembered Heiser's rds. Overnight the hardware-hacker market created by the tair and its followers, including IMSAI and Processor Techlogy, was virtually wiped out and replaced by a much bigger e—the software hobbyist market.

I thought about Heiser's words again in early 1979 when VisiIc was introduced at the West Coast Computer Faire. I knew it s going to be a hot product. Even so, I had no idea the number microcomputers would triple within the next few months, as a ing hole was blasted into the previously impenetrable smallsiness computing market.

I thought of his words again, naturally, in August 1981 when IBM announced its entry into personal computing.

When, a few weeks later, I was asked if I was interested in starting an IBM personal computing magazine, I thought of another statement I like to carry around with me. That statement, first uttered by a Russian revolutionary, was, "Seize the time, before the time seizes you."

I left my cozy editing job at McGraw-Hill and became wildly optimistic. Soon family and friends were drawn into the fray. We knew *PC* was a good idea, and we wanted to make sure we were the first IBM Personal Computer magazine published. However, as I was soon to discover, being wildly optimistic was not enough.

It was not enough when I boldly predicted that the first issue of *PC* would be 64 pages and carry 14 pages of advertising. At the time IBM had delivered only a handful of machines, so I thought it daring when I ordered 25,000 copies printed.

Being wildly optimistic was again not enough when the second issue reached 148 pages, nor was it enough when the third issue shattered the 200-page barrier. The fact that it was not enough was further evidenced when the first two issues sold out within a few days of publication. Had anyone predicted a year ago that the fifth issue of *PC* magazine would be over 400 pages, he or she would have been thought wildly optimistic or raving mad.

I TOOK THE ADVICE of Eddie Currie, who said, "Fasten your seatbelt and hang on tight."

Heiser was even more conservative than he admitted. Little did he know he was betting on a sure thing. His store grew rapidly and was soon moved to a classy shopping area of Santa Monica where it continues to prosper today (not selling Altairs, however).

I've decided to quit predicting what is going to happen. Instead of being wildly optimistic, I've decided to take the advice of friend and fellow personal computing pioneer Eddie Currie, who said, "Fasten your seatbelt and hang on tight." /PC

ZERO-BASE THINKING/JIM EDLIN

A Tale Of Two Cultures

Personal computing and Videotex: still unresolved and miles apart over the micro future.

On the morning of June 28, midtown Manhattan and Atlantic City were separated not only by the drive of about 3 hours, but by a conceptual gulf of a million miles. That day the two locales hosted the opening of two conferences, each purporting to fathom the course of your microelectronic future. The futures envisioned were polar opposites.

The Manhattan event was called the Videotex '82 International Conference. "Videotex" is a catchall word for methods of transmitting words and simple pictures from central computers to receiving devices—terminals—in homes, schools, and offices. The two main alternatives are transmitting the information via broadcast channels, in which case it tends to be pretty much a one-way business, and via physical channels such as phone wires or TV cable, which allow the exchange to have more of the character of a dialogue.

Videotex is hot stuff right now. Everybody from AT&T to CBS to your local newspaper publisher seems to have a premonition that videotex is destined to be the big medium of the future. It has acquired an electric aura of glamor, charged by visions of big, big money for the corporatinn or entrepreneur who first finds the key to its successful exploitation.

The Videotex universe is populated by three entities: information providers, informatinn utilities, aod users. Informatinn providers (IPs) are people who know something you may want to find out about; examples include newspaper publishers, the weather bureau, and department stores. Information utilities (IUs) provide an electronic newsstand where IPs can put up their infowares for browsing and possible sales. If the IUs don't have communication channels of their own, they use intermediaries, such as phone companies and broadcasters, who sell access to the connecting links. Finally there are the users—the ultimate reason for the existence of all the rest.

The conceptual gulf between the videotexers and the personal computer crowd was summed up in the disdainful tone used by Jeffery Wilkins, president of the CompuServe information utility, when he addressed a conference session with the observation that, "Most information service users so far are personal computer owners." Wilkins' palpable implication was that he hoped this obooxious state of affairs would not last long.

Videotex is wedded to the concept of the "dumb terminal," a device that lets you view images of information stored on the electrnnic premises of information utilities. You ask, it shows, and that's all.

Anyone making the drive down to COMDEX, the computer dealer's exposition in Atlantic City, would have found first-hand evidence that the videotex vision of Wilkins and friends is a stillborn dinosaur. One look at that hall filled with intelligent machines at affordable prices ought to have made it obvious that those proposing to traffic in dumb terminals face a career of pushing rope.

Ironically, I counted more IBM Personal Computers on the exhibit floor of the Manhattan event than I did at its counterpart to the south. So what were all those IBM PCs doing on the Videotex exhibit flnor? IBM brnught 'em, mostly. IBM had more floor space than any other exhibitor at Videotex '82.

IBM was showing the PC, mated wi hardware and software add-ons fr Wolfdata, Inc., as a machine for inform tion providers to format their text a graphics before shipping them off to t big computers of an information utili Naturally, IBM was also showing its Series 1 computers with videotex softwa packages already marketed in Europe, the recommended equipment for an inf mation utility's central computers.

IBM's Videotex '82 exhibit was in f substantially bigger than the compan display at COMDEX, suggesting that i portant somebodies within IBM have s not digested the significance of the p sonal computer (the capital or the sma letter version). Or perhaps IBM is just p dently hedging its bets.

It's depressing that during the week COMDEX a whole other conference people, representing an enormous amo nf invested money, envisioned that likely role for personal computers in ture data communications will be at sendiog eod. And nobody there seemed grasp what must be obvious to you w already possess PCs, that the rightful a inevitable place for PCs is at the receiv end.

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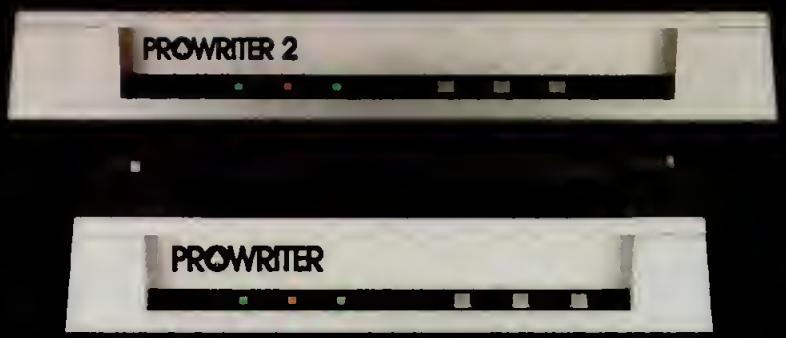

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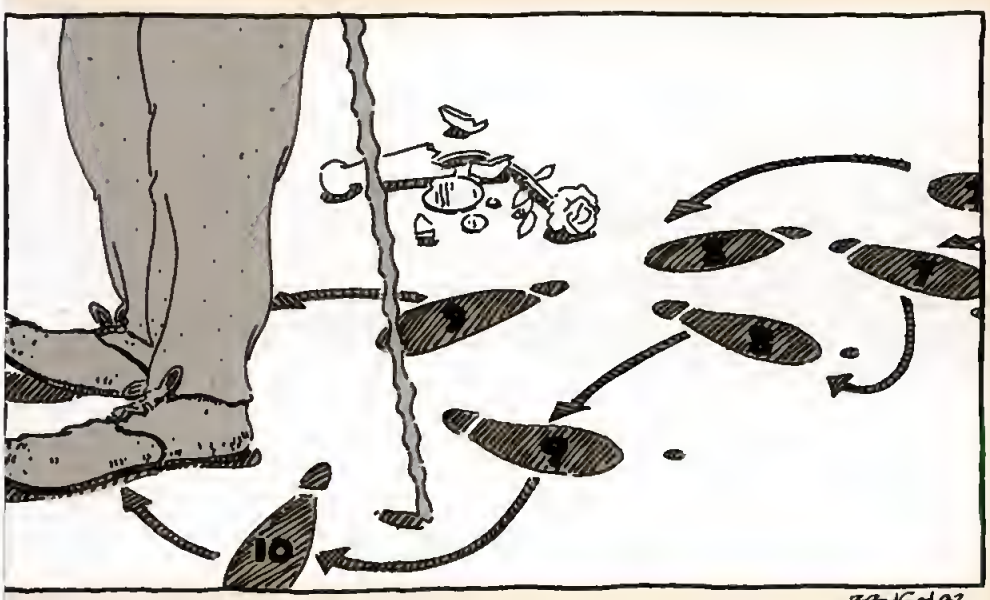
PCommuniques

A compendium of secrets new and old: The IBM scam, keyboard errors (who's in command now?), and rumors that the 8088 will become obsolete.



Care to Dance, Anyone?

In its widely shown television commercials, IBM has revived a favorite American character and his distinctive mode of movement. Clearly the PC purveyors (including this magazine with its June/July cover) were not the first to capitalize on old Charlie's style. It seems that William A. Downs and Roy Barton worked up a catchy little song called the "Charlie Chaplin Walk" way back in 1915, creating an instant stir in fox trot circles (or fox trot squares, to be more precise). Maybe Kim Carnes should do some reviving too, and record this song as a follow-up to her hit, "Bette Davis Eyes." We might even hear it on the soundtrack of a PC commercial one of these days.

Will the Real Henry . . .

One exhibitor at NCC, Osborne Computer Corporation, showed off not only its products but also its new television commercials. The commercials draw a parallel between Adam Osborne, the company's founder, and auto pioneer Henry Ford. (Closing line: "You can have your computer in any color you want, as long as it's blue.")

Osborne thus becomes at least the second personal computer mogul to compare himself to the Model T's creator. Radio Shack's Lewis Kornfeld did so in newspaper ads a couple of years ago, and there is a nagging memory that at one time Steven Jobs of Apple Computer also measured himself publicly for ol' Henry's shoes. (Since Osborne's machine has been described as the Volkswagen of personal computers, we wonder why he didn't pick Dr. Porsche, the VW's designer, as a role model instead. Porsche, after all, went on to do some much zoomier designs.)

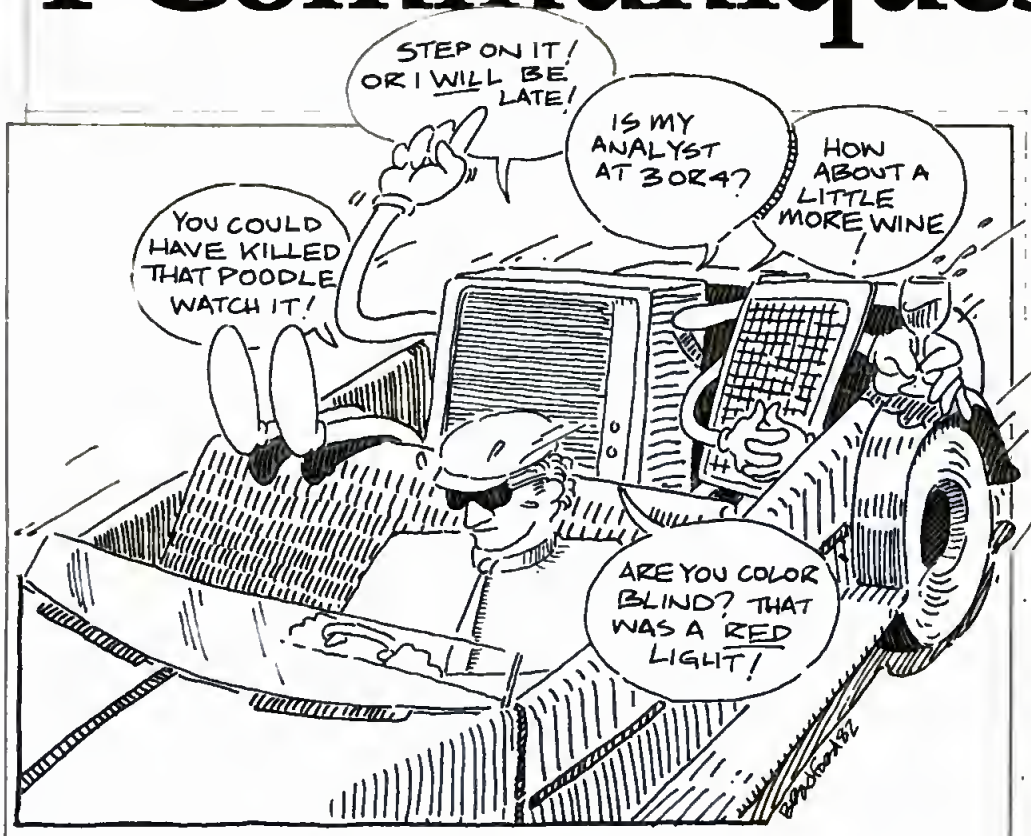
It's probably still too early to determine which, if any, personal computer entrepreneur ultimately will be recognized as the Micro Age's answer to Henry Ford. We are willing to wager that the role won't go to anyone for his or her role in creating the IBM PC.

In computer lingo this process of deciding which elements in one set of things correspond to which elements in another set (e.g. that the Osborne is to computers what the VW is to cars, and that the sleek, $8,100 Grid Compass is like a Porsche) is called "mapping." The way we map personal computers over to autos, the PC is definitely an Oldsmobile.

New Profession

According to many observers, the United States is changing from an industrial economy into an "information economy." On the plane back from the NCC, a *PCommuniques* correspondent ran across a good title for the professionals who'll design the structures of that new economy. The plane was abuzz with computer talk, and our correspondent inquired of the next seat's occupant if he too were in "the business." Indeed he was. The ensuing conversation revealed that the gentleman, Tom Gilb, was in fact an author, lecturer, and consultant on computers—a 20-year veteran of the business. But none of those words appeared on the business card he produced. The card read simply, "Tom Gilb: Infotect." Gilb says he invented the term. We don't know exactly what it means, but it has an interesting ring to it.

PCommuniques



Uncommon Operating System

Ersatz Enterprises has unleashed its new operating system, which will be exclusively for the PC. This unique product, named the Spoof Operating System (SOS for short), has the sole purpose of adding clarity to the instructions and error messages that have confused and confounded micro users for years. Even though PC-DOS is better than other widely used operating systems in this regard, the Ersatz folks saw room for further improvement. Instead of responding with the lackluster "Bad command or file name" when it receives some unrecognized input, for example, SOS fights back with messages such as, "Are you serious?"

Although *PC* has not yet received the actual Spoof Operating System on disk (an Ersatz spokesperson phoned to say it had inadvertently been left out of the package shipped to us), the documentation notes that SOS divides errors into four categories: Inconsequential Errors (indicating commands that the computer will perform but doesn't appreciate), Boring Errors (those that show a lack of judgment by the operator), Grievous Errors (to let users know they've really messed up), and Apoplectic Errors (meaning that if it were human, the computer would be having a stroke). A sampling of these on-screen greetings includes "Loss of interest" (Boring Error #6); "Your typing leaves a great deal to the imagination" and "Last time our circuits were consulted we had no imagination" (Grievous Errors #3 and #4); and "It's all over now Baby Blue" (Apoplectic Error #BD).

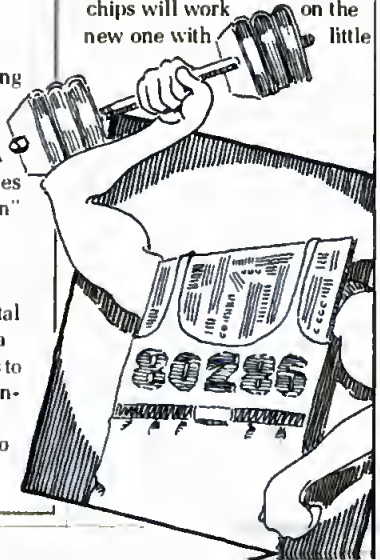
When asked to comment on this new product, the Ersatz representative said, "Our goal is to put the fun back into computing. We believe we've created the thinking person's operating system." SOS can also be customized for special applications, and suggestions for additions to this vital new tool are welcome. An enhanced version, SOS 1.1, is in the works; it will perform certain data management tasks such as spontaneously renaming disk files, usually overnight. Ersatz also promises to publish a catalog of its products in the coming weeks, to include one we're dying to see—the Tongue-in-Cheek Speech Synthesizer.

Because Ersatz is in the process of moving its headquarters, send all queries and suggestions to PCommuniques.

80286 in the Wings

The stage has been set for an ultra-powerful descendant of the IBM PC. Intel, maker of the PC's 8088 processor chip, has announced a highly souped-up version in the same family, the 80286. (Intel really prefers to call it the iAPX286 but refers to it both ways.)

With a lot of clever tweaking Intel engineers have made the 80286 capable of doing five or six times as much computing as the PC's 8088 chip in the same amount of time. The 80286 can also work with a much larger complement of memory than the 8088—16 times as much, in fact (which is the same multiple by which the 8088's maximum memory exceeds that of the earlier 8086 chip). Here's the good news: Unlike the case of software for the 8080 chip, which must be reworked significantly to run on the 8088, your PC software will be just about completely compatible with the new 80286. This won't work in reverse; programs written for the 80286 may not work on the earlier chips, but programs for the 8086 and 8088 chips will work on the new one with little



or no change.

Intel says it will begin shipping samples of the 80286 to interested buyers in the fall. They'll be $237 apiece at first, if you're willing to buy them 100 at a time (or go in with 99 friends). Knowing the fast response of folks who build plug-in devices for the PC, we wouldn't be surprised to see someone advertising an 80286-based gizmo in these pages before Christmas. The Tecmar people probably have someone camped out in line already.

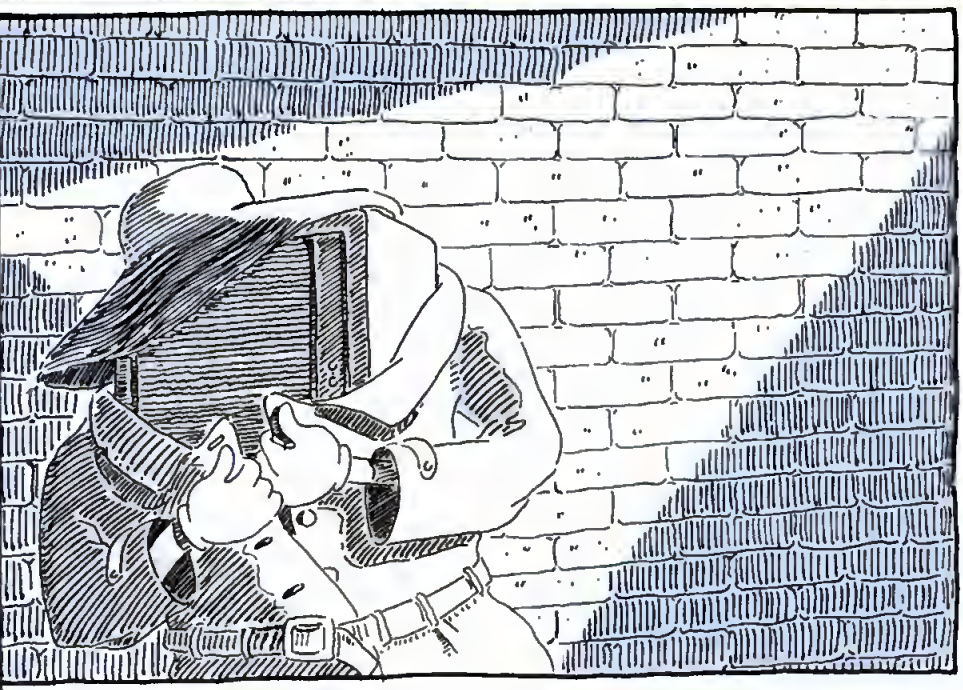
"Operations people wear socks with holes; programmers wear mismatched socks; systems analysts are lucky if they manage to get to work with one sock."

— Anonymous computer operations director of a major bank

Disk Drive Ditties

Some fascinating speculation, rumors, and related developments have surfaced regarding disk drives for the PC. One well-placed source has told *PCommuniques* that IBM has added another supplier of disk drives to its roster. According to our reporter, Micropolis will be producing some 500,000 drives (whether single- or double-headed we haven't discerned) for factory installation in PCs. This half-million is in addition to the half-million already on order from Tandon, the original disk drive supplier, which is producing drives at the limits of its capacity and could not promise to double its output to meet the demand for PCs. Our source also reports that IBM anticipates orders for 750,000 PCs by late 1983.

On the issue of compatibility among different brands of computers, Osborne seems to have made a wise move in designing and upgrading its disk drives to double density. In addition to increasing the storage capacity of each disk, the new Osborne drives will reportedly be totally compatible with PC disks so PC users can utilize data from Osborne disks. (The question of operating system compatibility is a bit more cloudy, but the wizard users of these two computers will undoubtedly find a solution to this problem.)



Always a Local Angle

The IBM-Hitachi-Mitsubishi stolen secrets case grabbed the national headlines for a few weeks, and some industry observers predict many more such operations will come to light. Although the Japanese computer firms concentrated their cash and circuitous contacts on the large computers in this case, the PC was included in the coverage, at least by implication. On the day the case broke, "CBS Evening News" showed workers assembling computers at an IBM production plant, and guess which computer they showed: our humble PC. (All the big stuff was too secret to photograph.) It's probably just a coincidence that Hitachi has introduced a PC-compatible machine.

PCommuniques Pays

Do you heve news, gossip, or unusual computer tales for *PCommuniques*? We will pay up to $50 for each submission used. You must include your name, address, and telephone number with the item. We will preserve your anonymity if you wish. All submissions become the property of *PC* and are subject to editing. Our *User-to-User* section also publishes and pays for readers' submissions; it features tips, problem solutions, and short programs or routines. Please address submission to the appropriate department—*PCommuniques* or *User-to-User*—*PC* magazine, 1528 Irving St., San Francisco, CA 94122.

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TECMAR'S TRIUMPH: A Decade of Success

A candid interview with Tecmar's founder, inventor, and president, Marty Alpert, that reveals an unusual perspective on the future of personal computer hardware for home and scientific use.

Marty Alpert's initial idea was to market a single component, but after 8 years that single project has grown to become Tecmar, Inc., one of the leading manufacturers of hardware products for the IBM PC.

Alpert is founder and president of Tecmar. The company was incorporated in 1972 to manufacture the pulmonary medical equipment Alpert designed while he was in medical school. Certain components of his invention were then unavailable, so Alpert and his team began designing and manufacturing the parts themselves and eventually marketed them to the general public.

By 1981 Alpert's corporation had released 20 new products for the PC. Today that number has increased to over 30. He predicts another 20 new products will be on the market within a year.

Most surprising about the explosion of Tecmar's personal computer line is that Alpert's original goal was to manufacture only medical products and maintain a stronghold as a medical practitioner. This diversification encouraged the development of products such as PC-Talker, a speech synthesizer, and Video Van Gogh, which allows the IBM PC to input video information from a TV camera. Products for the blind and the computers implemented in electrocardiograms are other possibilities. PC Publisher and Editor-in-Chief David Bunnell interviewed Alpert at Tecmar's industry headquarters in Cleveland, Ohio.

PC: What are some of your thoughts about the impact and significance of the IBM Personal Computer?

Alpert: It is becoming the computer of the decade. In one form or another it's going to be the machine most people rely on for their computing needs. Although it's not the most powerful system around, it has all the power needed for the software developed during this decade.

PC: In what specific areas do you see the

Photograph: Jacqueline Poitier, Hand Tinting: Alice Lager

ALTHOUGH it's not the most powerful system around, it has all the power needed for the software developed during this decade.

PC moving? Is it o business computer?

Alpert: It was initially considered a business computer; clearly that's a very impressive and large market. However, one of the most surprising things is that the scientific market is also very significant—much larger than we had anticipated. And the home market has been smaller.

PC: Whot ore some of the woys the PC is being used in the scientific-industriol morket?

Alpert: The IBM PC is being used in cardiology, in fluid and aerospace research, and in process control applications for industrial environments. It's not one specific application that makes the PC significant. It's versatile enough to be used effectively in numerous applications.

PC: How would you use the PC in cordiology?

Alpert: For electrocardiograms; it's powerful enough to read them and do analysis.

PC: Would the PC be more occurote thon o physicion ond do the job more quickly?

Alpert: Yes; the results would be more representative and repeatable.

PC: At the time of this interview your company, Tecmar, has developed on incredible number of hordwore products for the IBM PC.

Alpert: Thirty-two, and we will have 52 products a year from when we announced the first [November 1981].

PC: You're introducing one product o week?

Alpert: Yes.

PC: Con you tell us about some of Tecmor's most recent products?

Alpert: We've just announced 8-inch diskette drives for the PC. We are also announcing a multiple-function card with memory, time of day with battery backup, serial and parallel I/O, as well as an encryption code designed for the banking industry. It processes the code and gives back a code. It is both the knowledge of the input and the way it's going to get processed that you have to know. It's fairly tight from that standpoint and can be used to protect software as well. Another product is a cabinet that takes the PC main unit off the desk.

PC: Does it hold both the PC unit ond the Tecmor expansion cobinet?

Alpert: Yes.

PC: Whot is the significonce of the 8-in disk drive?

Alpert: It's important for three reasor The only industry standard for diskettes the 8-inch single-density standard, so y will now be able to read and write the It's an effective backup to Wincheste and is very fast. And because it stores megabytes in a removable media form, substitutes as the primary storage devi on a lot of applications that previous needed the Winchester.

PC: What obout future products?

Alpert: One of the more exciting produc we've begun talking about is a 68000 alte nate microprocessor board for the PC. will allow the PC to run all the 68000 so ware that's becoming available. And will give the PC a full 16 megabytes address space. You will be able to run t 8088 processor simultaneously with t 68000.

PC: Whot is the ultimote PC, the most s per PC you con imogine?

Alpert: For today's technology it would 68000-based with removal media Wi chester and very high-resolution col graphics, probably based on the NEC-72 chip and even allowing multiple users.

PC: Why would someone do thot with IBM when he or she could buy o 680 machine from onother vendor?

Alpert: I think that even with the alterna processor board it will be cost effective buy the IBM PC, because you have all t software available for the PC and all t hardware additions that are on the PC b are not available on any other system.

PC: What are some other upcoming pro ucts?

Alpert: Voice input is another area we very interested in and will be including later projects. It will be able to handle b tween 40 and 100 words of voice recog tion and will be somewhat user depe dent. A training session will be involve but I think it will be very effective fro that standpoint. You will be able to u voice input for a tremendous number medical and industrial applications f on-line production.

PC: What would be some of the medi

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IT'S NOT ONE specific application that makes the PC significant. It's versatile enough to be used effectively in numerous applications.

applications?

Alpert: Working with the blind is one such application.

PC: What about industrial applications?

Alpert: People on a production line will be able to tell the computer the status of a certain part as opposed to having to write it down or type it into a terminal.

PC: Will they be able to use it while they're using their hands for other things?

Alpert: Yes.

PC: You already have a speech synthesizer called PC-Talker. Can you tell us a little about that?

Alpert: It has two types of synthesizers on it. It has a vocabulary synthesizer, which has very good speech sound but a limited vocabulary. Initially it has only 143 words, but we left room on the board to triple that. If you can't say what you need to with the natural speech synthesizer, you can have a Votrax phonetic synthesizer, which will say anything with the basic units of sound. We also have software available that will take whatever gets typed onto the keyboard and convert it to the Votrax, so the same way you do a Control-P statement to have the printer type out anything that comes on the screen, you can use a Control-L statement to save anything that appears on the screen.

PC: What would be some of the applications for PC-Talker?

Alpert: One is a warning device for industrial applications; another is an aid to the blind. Those are the major emerging areas.

PC: What about Video Von Gogh? Can you tell us something about that?

Alpert: Yes. It does 256 x 256 pixels, horizontal and vertical. It has 256 levels of gray, which is good imaging for industrial and scientific applications for production lines. One of our video digitizers is being used in the production line for GM trucks frames to see if they have the right holes; if they do, the truck gets processed; if not it gets rejected. We've developed the visual control for the space shuttle arm. Coming up with the algorithms to determine how to move the arm around is one of our most exciting projects. And we've just gotten a second contract from NASA to do an upgraded system with the eventual goal of being able to apply it—to have it go up in the space shuttle.

PC: How did Tecmor get started?

Alpert: The company incorporated in 1979 to develop medical products. As you know, I'm a physician and an engineer. We initially came up with a new idea in the pulmonary area that had to be microprocessor based. As part of the development of the medical product, we needed certain components that weren't available for microprocessors, specifically analog-to-digital and digital-to-analog converters. We developed them in a general sense, so we could use them in our medical product development and also offer them to the general market. By doing work with the 8088 microprocessor, we were in a very good position to do the products for the PC. We also developed mechanisms to create products very rapidly.

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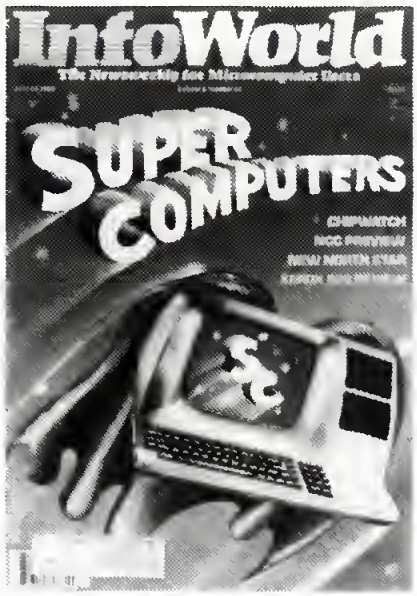

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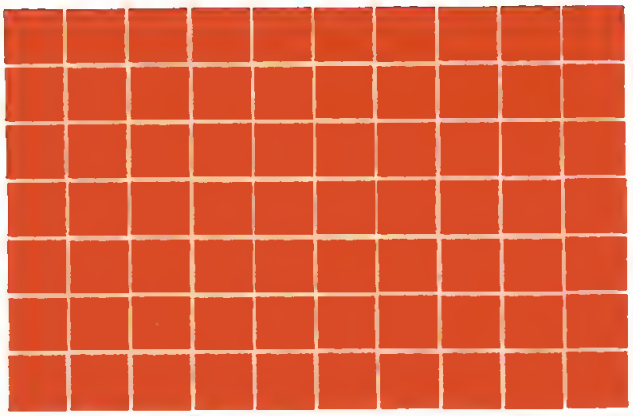

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PC: *Which did you do first, engineering or medicine?*

Alpert: I did engineering first. I got my M.S. in systems engineering and then went to medical school. We began the company while I was in medical school. I still practice, but not extensively. I'm primarily with the company.

WE'VE developed the visual control for the space shuttle arm.

PC: *When you decided to go to medical school, was it your intention to develop medical products?*

Alpert: Yes. I never really wanted to practice solely. Although I have a small practice now, I've had the same patients for a number of years—people I've grown close to. I have one patient who is 105 years old and another who is 99.

PC: *It must be very unusual to have a medical degree and an engineering degree, although having both certainly seems very practical.*

Alpert: I think it is practical. I think the practicality and the excitement of both areas is becoming more recognized, but at present the combination is still unusual.

PC: *Tell us more about future medical applications for computers.*

Alpert: The first application is taking care of bookkeeping and giving prescriptions. This area is very significant because 25 percent of hospital costs are for paper transfer. If a physician in a hospital wants to get a blood sample from a patient, he writes it on the chart. It gets taken off the chart by the nurse who fills out the papers. Those papers then go to the person who draws the blood and finishes filling them out. Four sets get distributed: one to the lab technicians, one to the central accounting area, one to the central distribution of paperwork, and one stays at the desk. Then the blood is transported to the lab, and a report is made. It goes to the computer room where it is retyped into the central

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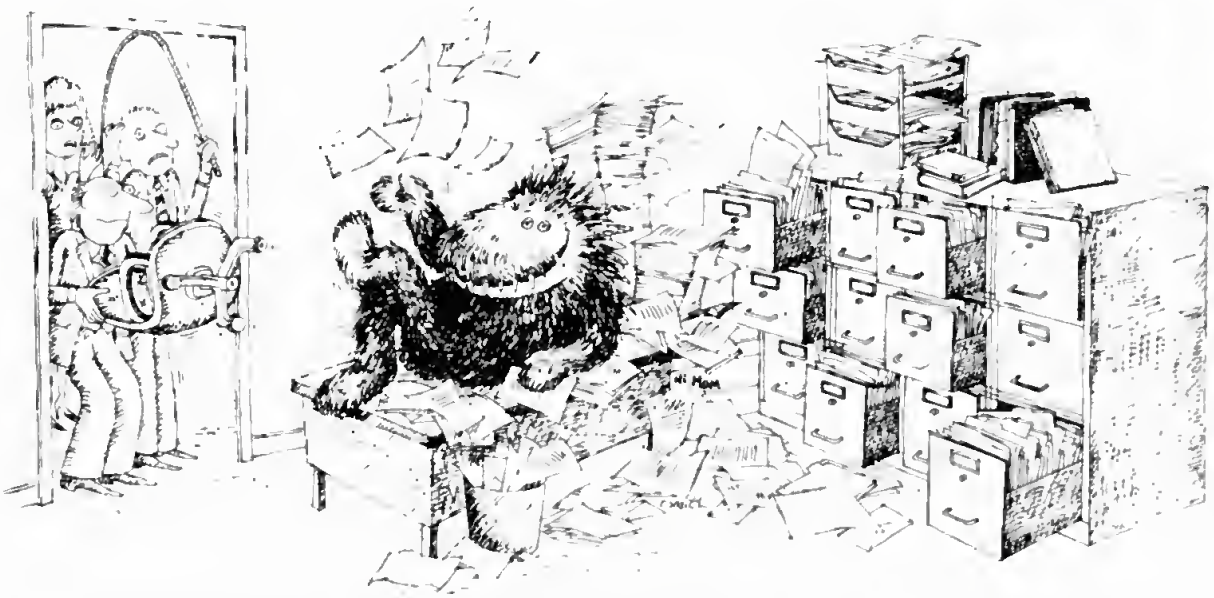

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MICROPROcessors are being used to control the insulin for diabetic patients.

PC: What ore some of the other ways the computer could be used as a diagnostic tool?

Alpert: In the long term, the thought pro-cess of the physician can be algorithmized for most diseases, so you can use a comput-er to help in the initial stages of diagnosis.

PC: What about keeping individual medi-cal histories? For instance, if I go to a phy-sician and he wants to know my medical history, he's not going to get a good record. I haven't been to a physician in about 5 years and that was in another city. I don't even remember his name. Could people be given some kind of memory device at an early age that the doctor and the pa-tient could keep so that when the patient goes to another doctor the device could be updated?

Alpert: Actually, it could be just a floppy diskette. That's an interesting concept. It's not one I've considered, but it certainly is interesting. Things on a lower level are be-ing done now, such as people with cardiac conditions carrying representative elec-trocardiograms. Comparing an old cardio-gram to a new one is very important for determining changes.

PC: Now a question for the future. Do you think microprocessors will be implanted somewhere in the human mind, teeth, or whatever at some point in time?

Alpert: I hope not. I think only in a patho-logical sense—epilepsy control or control-ling an arm for prosthetics. Some pioneer-ing work is being done that is pretty far along. Microprocessors are being used to control the insulin for diabetic patients. The microprocessor device would be put on the patient's arm to give much tighter control of sugar levels. The device is pres-ently being tested.

PC: That's amazing, but back to Tecmar. The IBM Personal Computer obviously had a big impact on Tecmar. Just how fast has it grown and what does that growth mean?

Alpert: We will probably grow at a magni-tude of about ten times over last year. And we had a good year last year. We're expect-ing to grow four to five times that by next year.

PC: Will Tecmar go public at some point?

Alpert: That is a distinct possibility. It would make sense to continue rapid prod-uct development.

PC: You definitely intend to continue fol-lowing IBM?

Alpert: Yes. Our main goal is to become the major supplier of peripherals for the IBM Personal Computer.

PC: You must have a tremendous data base about the IBM PC. Can you give us a pro-jection on how many IBM Personal Com-puters will be in the field by the end of 1982?

OUR MAIN goal is to become the major supplier of peripherals for the IBM Personal Computer.

Alpert: My guess would be 250,000 to 300,000.

PC: That seems consistent with what we're hearing. What about by the end of 1983; do you have one for that?

Alpert: I think you're going to be looking at 3¼ to 3½ million.

PC: When IBM introduces a product in Europe, Japan, and England, will Tecmar follow suit?

Alpert: Absolutely, we've already begun to establish some dealers in those areas. It's a great opportunity. /PC

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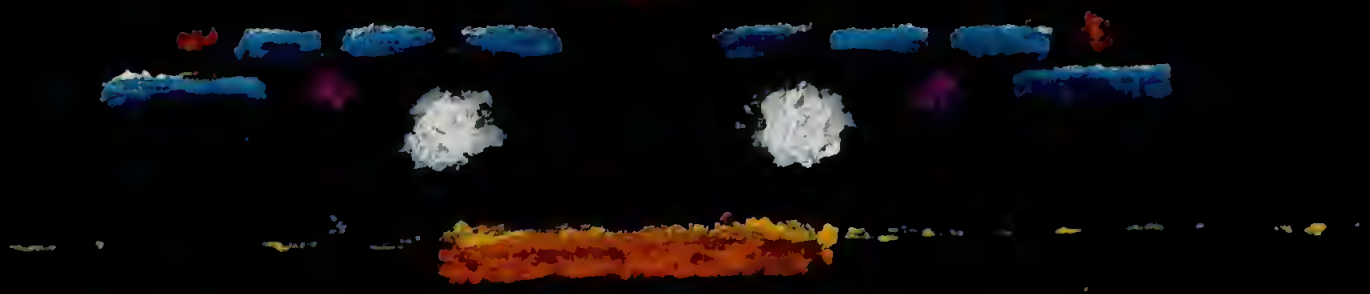

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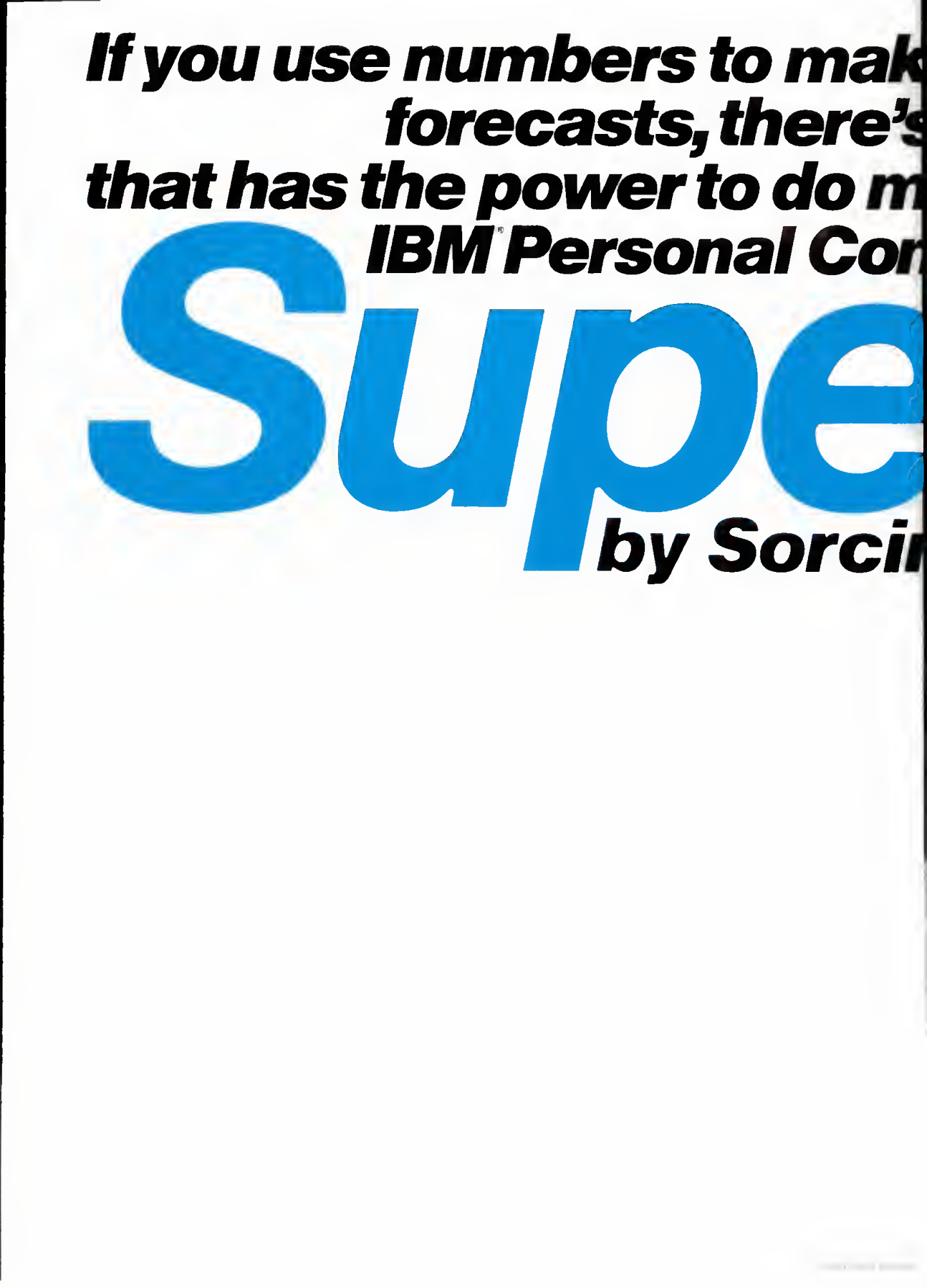

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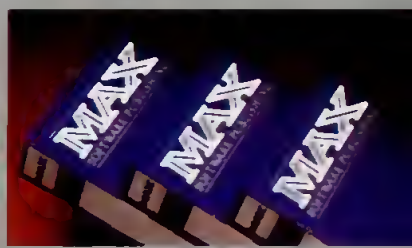

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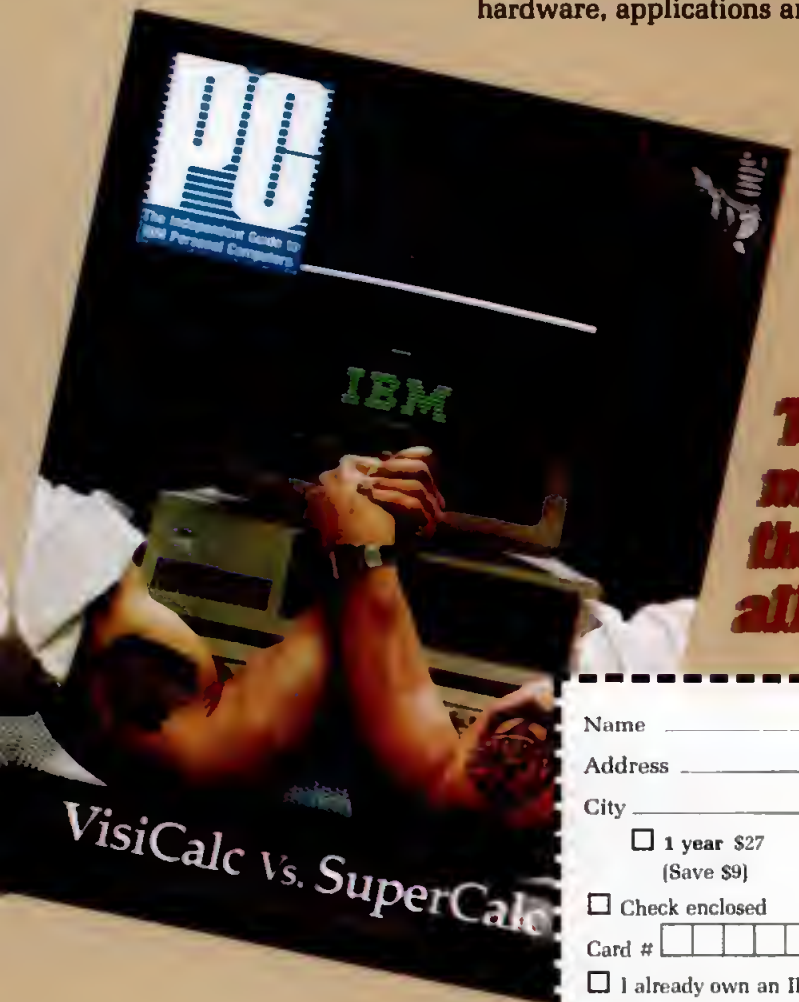

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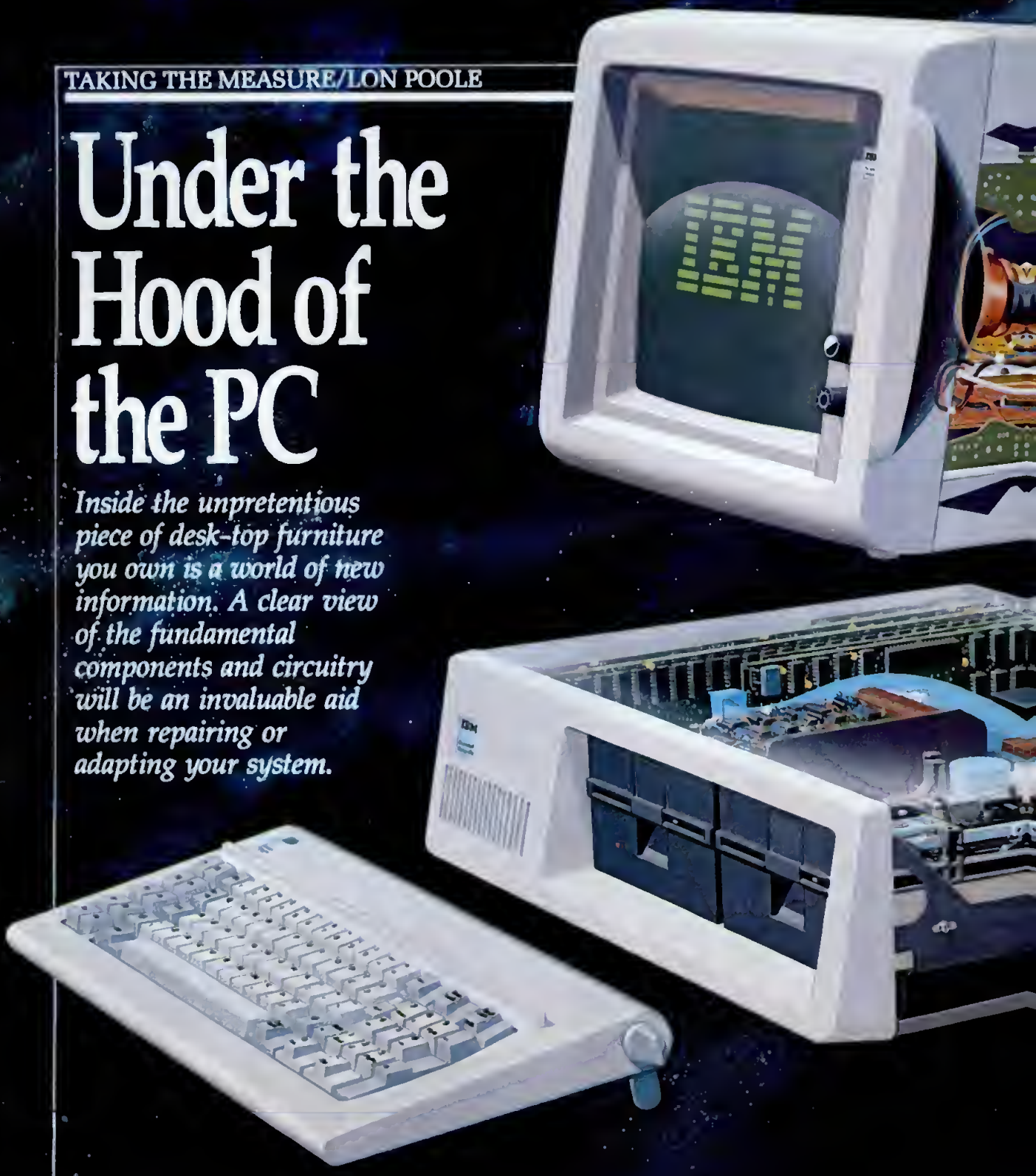
TAKING THE MEASURE/LON POOLE

Under the Hood of the PC

Inside the unpretentious piece of desk-top furniture you own is a world of new information. A clear view of the fundamental components and circuitry will be an invaluable aid when repairing or adapting your system.



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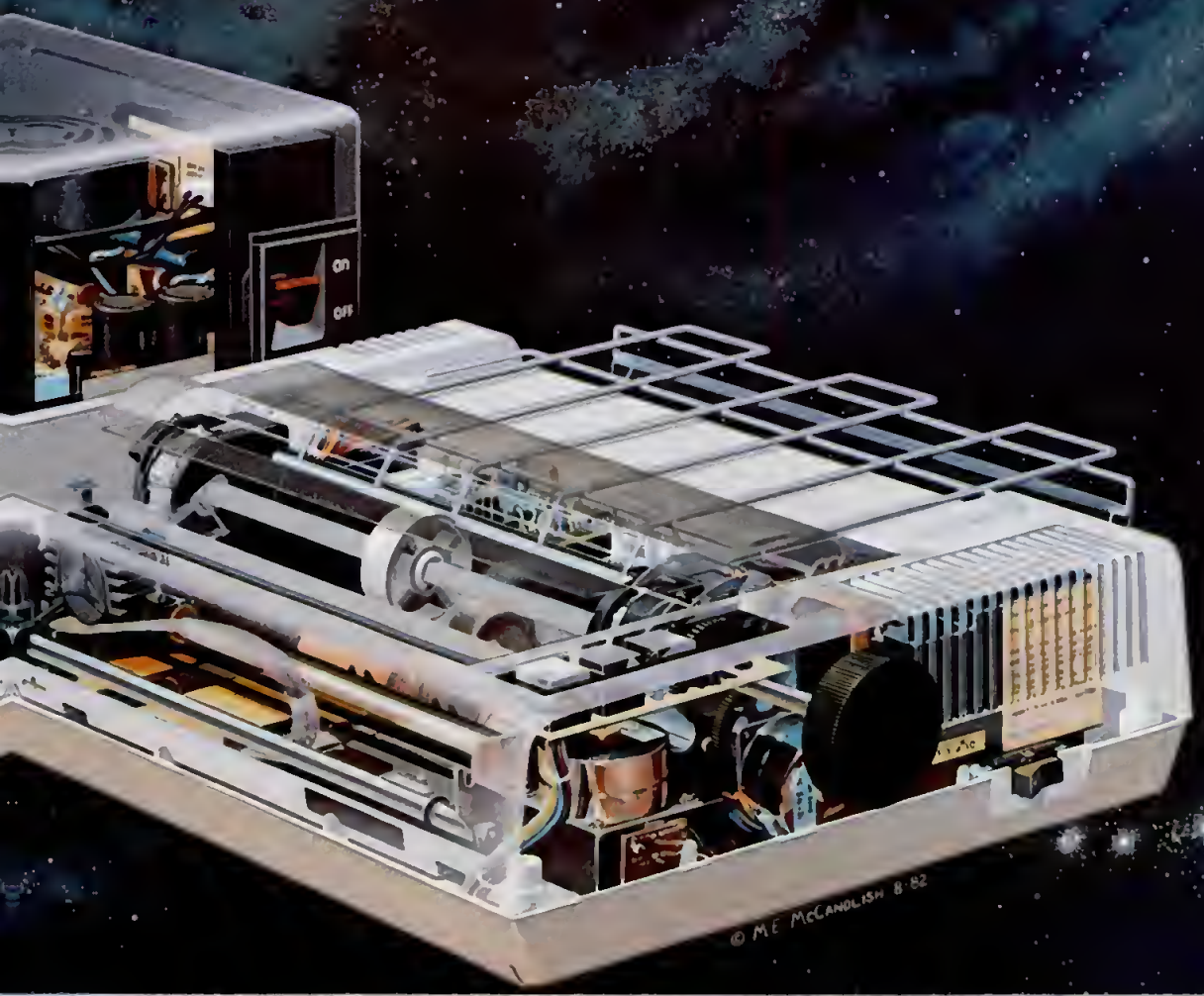
The PC is a system of many pieces, each designed to do a specific job. The keyboard receives your input, the display screen shows the results of system activity, disk drives store programs and data, and the printer furnishes permanent, portable reports. None of these, however, is as essential as the system unit, the kingpin of the PC system. It controls the flow of information between each and every component that plugs into it. The system unit can do more than shunt raw information from one device to another. It can process incoming information—extracting, combining, deleting, and calculating—to come up with entirely new information.

You would expect the system unit to be a complex device; one look inside it confirms that suspicion. You need not understand the intricacies of all the circuitry to use the PC, but you should be familiar with what is inside, even if you don't know exactly how it works. In this respect, using a PC is like operating an automobile. Under the hood of a car is an engine, a transmission, a battery, a starter, probably a radiator, possibly an air conditioner, and more. Chances are you don't know or care exactly how all those parts work, but you know they are there. A PC system unit has a *(continues)*



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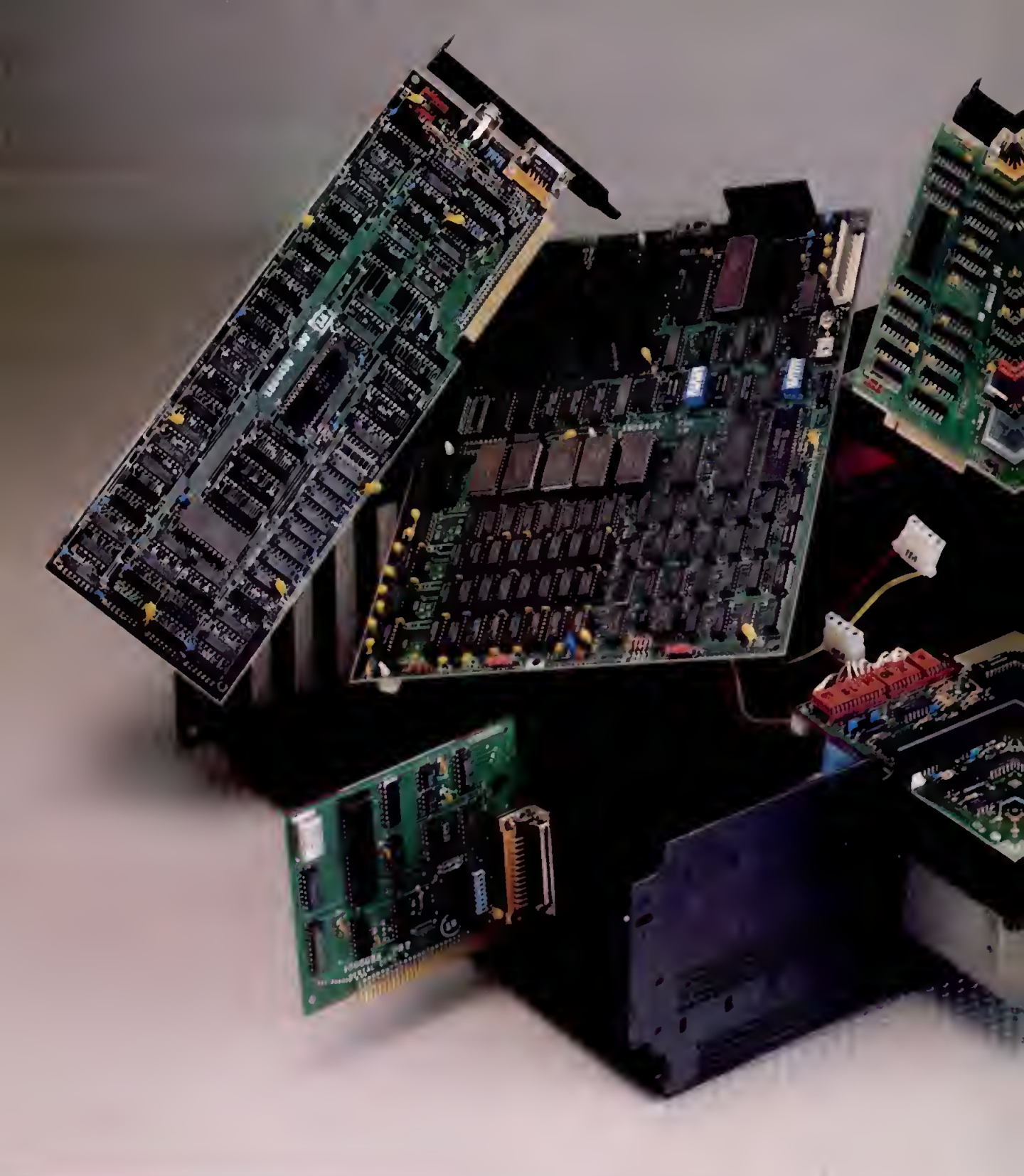

power supply, a microprocessor, memory, probably a disk drive or two, and more. You can know what's inside without knowing how it all works.

All PC system units have a number of parts in common, and those standard parts give the PC its unique personality among computers. The system unit also accommodates a certain number of optional parts. They determine the amount of memory the PC has and whether it uses a color or monochrome monitor, disk drives, a printer, telecommunications, and so on. No one system unit will have all available options, because some are mutually exclusive. Besides that, expansion space inside the system unit is limited, and there are more options than there is room to instal them. Two PC system units that look alik on the outside may actually have quite dif ferent capabilities. Remove the cover, in ventory the internal contents, and you wi know what that PC can do now and wher there is room for future expansion.

Under the System Unit Cover

The system unit is actually more than a single component; its cabinet houses many separate pieces. Figure 1 shows the back of the system unit and the pnwer supply. On its left are the adapter cards, which are mounted on top of the system board. Diagonally opposite the power supply is a small speaker. Two optional diskette drives are installed in this system unit, in front of the power supply. Hidden hy other components are the microprocessor, memory, system configuration switches, and many incidental parts.

The System Unit Disassembled

In Figure 2 the component parts of a typical system unit pose unnaturally so you can get a better look at them. The system board is the large board in the center. It contains small electronic components called integrated circuits, or chips, that control all PC activity. Surrounding the system board in Figure 2 are three of the many adapter cards that permit color graphics (top left), telecommunications (bottom left), and diskette drives (top right). The diskette drives themselves slide into a rack in the front of the system unit chassis.

The Power Supply

The main system on/off switch controls the flow of electricity into the system-unit power supply (Figure 3). The power supply in turn furnishes electricity of the correct voltages to the system unit electronic circuits, the diskette drives, and the keyboard. The power supply also contains the ventilation fan fnr the entire system unit, mounted on the underside of the power supply cnver. Touching the components inside the power supply can result in a powerful electric shock even with the system unit unplugged.

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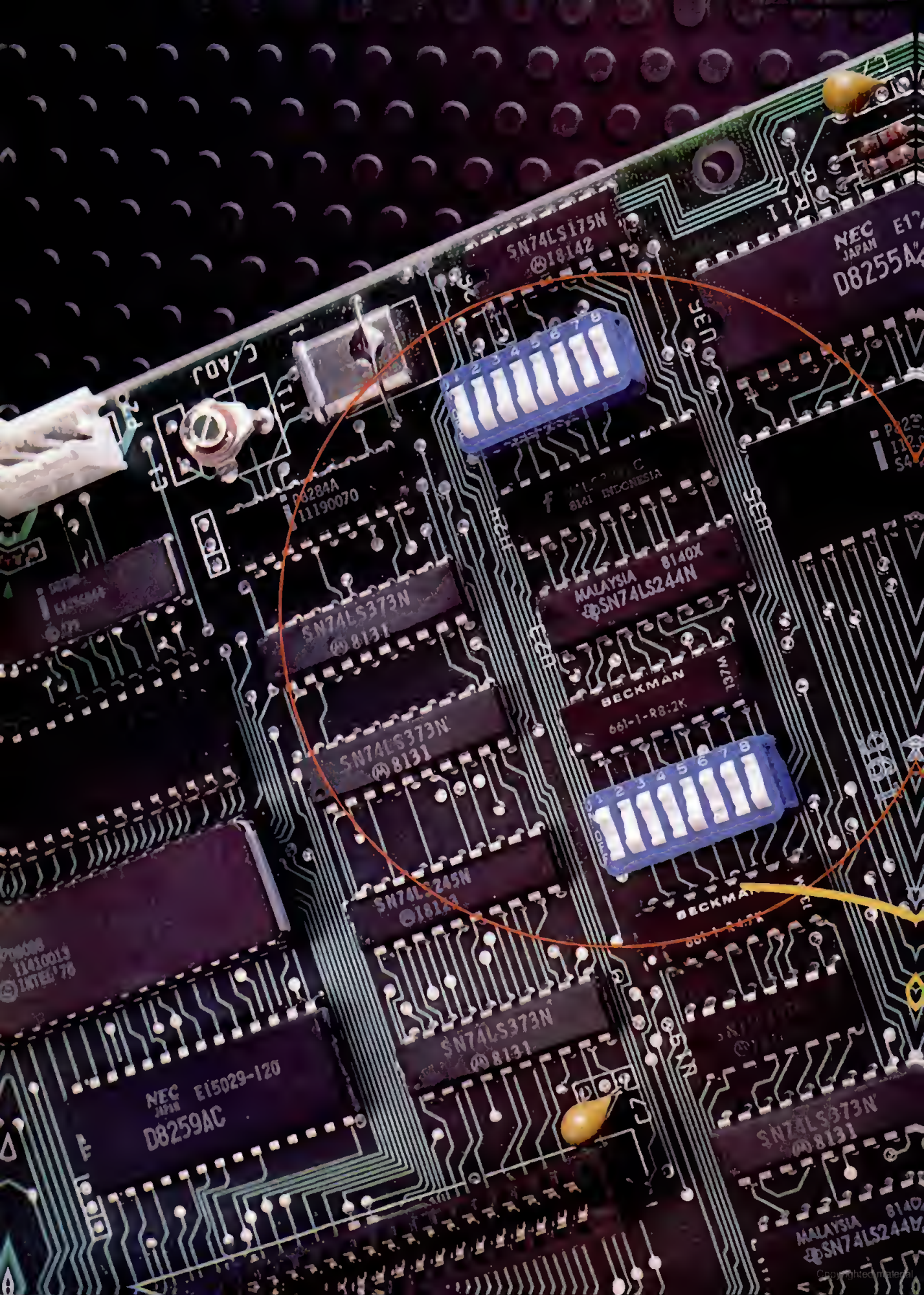

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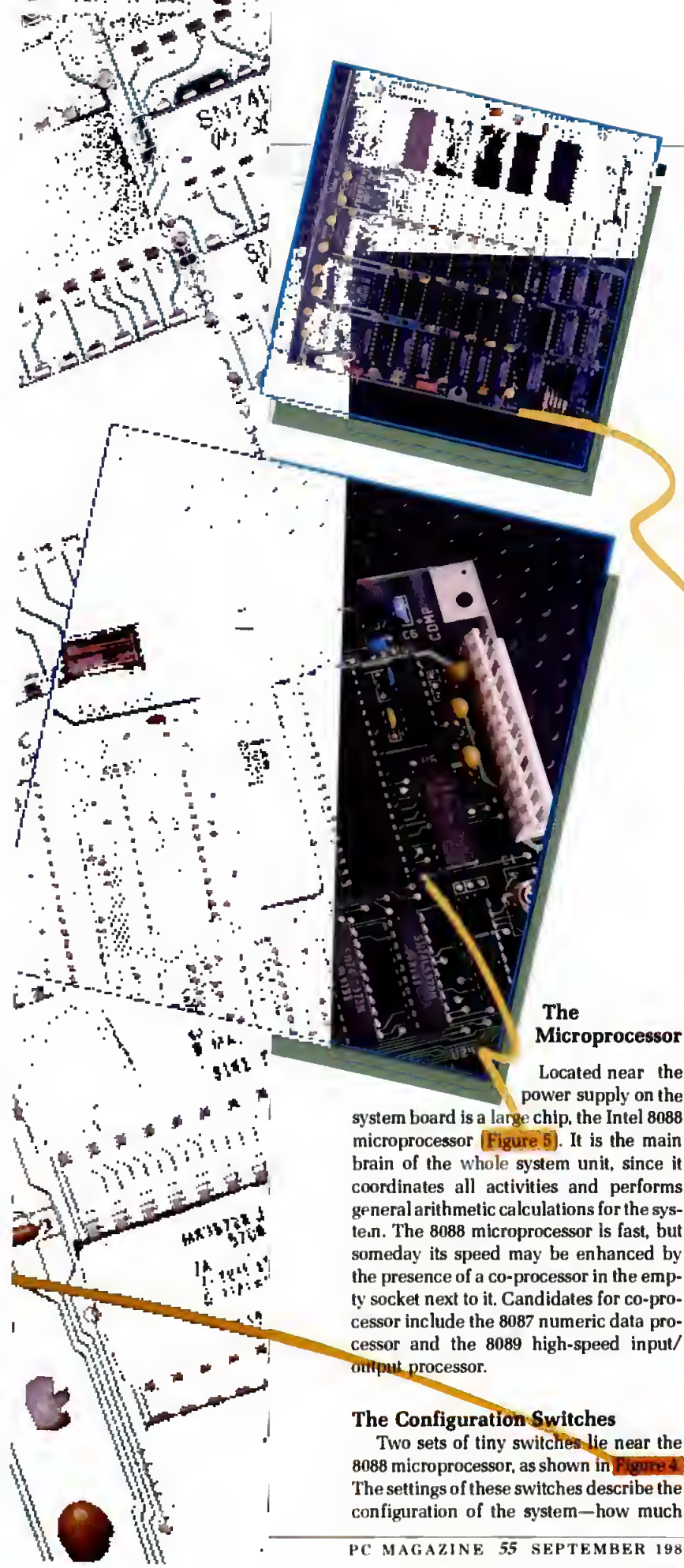


SOME ADAPTER cards combine several functions onto one card.

The Microprocessor

Located near the power supply on the system board is a large chip, the Intel 8088 microprocessor (Figure 5). It is the main brain of the whole system unit, since it coordinates all activities and performs general arithmetic calculations for the system. The 8088 microprocessor is fast, but someday its speed may be enhanced by the presence of a co-processor in the empty socket next to it. Candidates for co-processor include the 8087 numeric data processor and the 8089 high-speed input/output processor.

The Configuration Switches

Two sets of tiny switches lie near the 8088 microprocessor, as shown in Figure 4. The settings of these switches describe the configuration of the system—how much memory and what kind of display is in use. Switch settings differ depending on the choice of options. The installation manuals included with optional equipment depict the various switch settings.

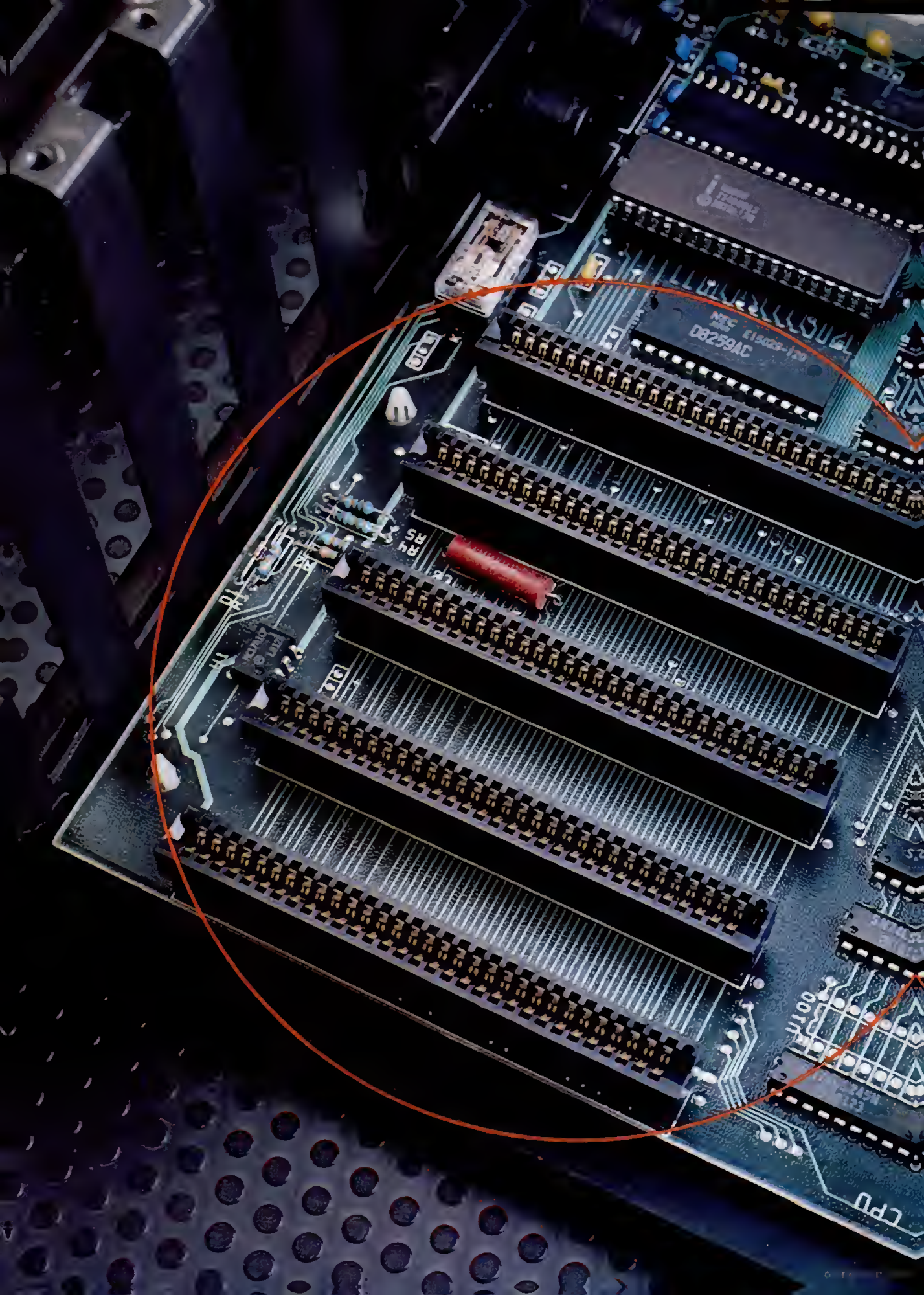
Memory

PC memory, like most computer memory, is measured in units called bytes. One byte of computer memory can store one character, so you can think of bytes as characters. But computer memory stores information other than characters, including numeric values and programs. Because of certain facts about computer circuitry architecture, memory capacity is usually a multiple of 1,024 bytes. That much memory is called 1K bytes.

Every PC has 40K unchangeable memory, called read-only memory (ROM), which has its contents indelibly set when it is made. (See Figure 6.) The contents never change, even when the power is off. Crucial information that tells the PC how to interpret BASIC language commands and how to perform other basal chores resides in ROM.

Another kind of PC memory goes by several names, including dynamic memory, read/write memory, and random access memory (RAM). Information can be stored in it and recalled from it any time the PC is on. But turn the power off and its contents vanish. Read/write memory's volatility is a function of its main asset, the changeability that allows the same memory to be used and reused for any purpose.

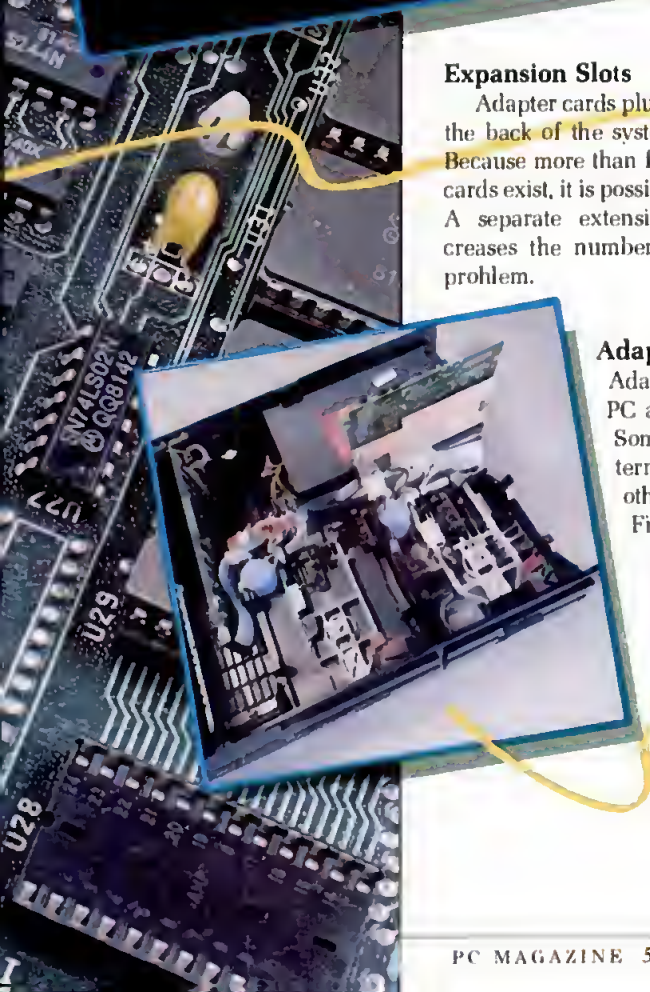
The PC has five 8K ROM chips, shown in the top row of Figure 6. Next to them is an empty socket that can hold another ROM chip. The nine leftmost chips in each of the bottom four rows comprise 16K of dynamic memory. The system board always has at least 16K of dynamic memory (nine chips present), and may have 32K (18 chips present), 48K (27 chips), or 64K (36 chips), as shown in Figure 6.


NEC
D8259AC
CPU

YOU NEED not understand all the circuitry to use the PC, but you should be familiar with what is inside, even if you don't know exactly how it works.

Expansion Slots

Adapter cards plug into the five slots at the back of the system board (Figure 7). Because more than five different adapter cards exist, it is possible to run out of slots. A separate extension chassis that increases the number of slots solves the problem.



Adapter Cards

Adapter cards make the PC a versatile computer. Some cards support external equipment, while others are autonomous. Five IBM adapter cards are shown in Figure 8: the monochrome display and parallel printer adapter (top), the color/graphics monitor adapter (bottom), the diskette drive adapter (right), the asynchronous communications adapter (left), and the game control adapter (center). Adapters not shown include supplemental memory; battery-powered clocks; experimental circuit testers; and controllers for disk drives, printers, and communications with other computers. Some adapter cards combine several functions onto one card, conserving slots in the system unit and making it possible to connect more optional equipment without using an extension chassis.

Diskette Drives

The diskette drive has both mechanical and electronic components. Figure 9 shows two drives with their circuit boards removed, making mechanical parts visible. The left-hand drive has a diskette fully inserted in it, while the right-hand drive has none.

Remember to replace any parts you have moved and restore the cover to its original position. If you have followed to this point, you should have no trouble repeating the checkup.

Choice A – The Book, IBM Personal Computer: An Introduction to Programming and Applications Larry Joel Goldstein and Martin Goldstein

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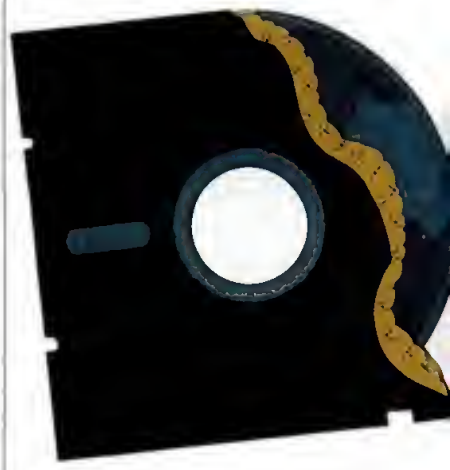

A memory device with recall capabilities every human brain should envy.

A diskette (Figure 10) is an auxiliary storage device, a kind of memory extension. Anything in memory can be stored on diskette and subsequently recalled for reuse. This means the PC can switch from one task to another as fast as it can recall a program from diskette. It also means program size and complexity are no longer limited by memory capacity, because a program can store unneeded information on a diskette and use the dynamic memory thus freed for other information recalled from diskette.

The entire diskette set-up consists of three parts: an adapter card that fits into one of the expansion slots inside the system unit, the diskette itself, and a machine that reads from and writes onto it—the diskette drive.

A diskette consists of a circular, flexible plastic disk coated with a magnetic film and encased in a protective, stiff plastic jacket. A nonabrasive gasket isolates the delicate magnetic coating from the plastic jacket, which in turn protects the interior parts from harsher physical indignities.

The diskette fits into a slot in the front of a diskette drive. The drive grips the flexible plastic disk through the center hole, spins it inside the jacket, and accesses the information recorded on the magnetic coating through windows cut out of the protective jacket. */PC*

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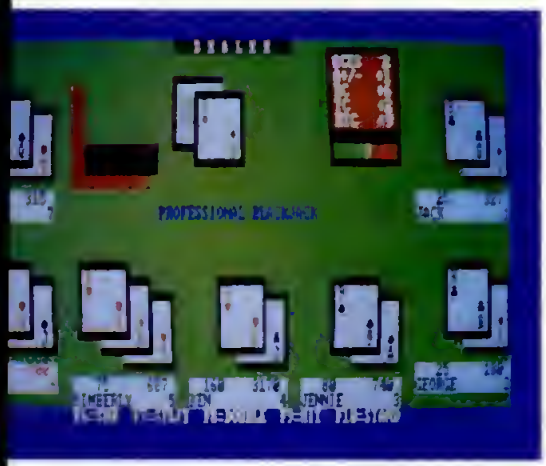

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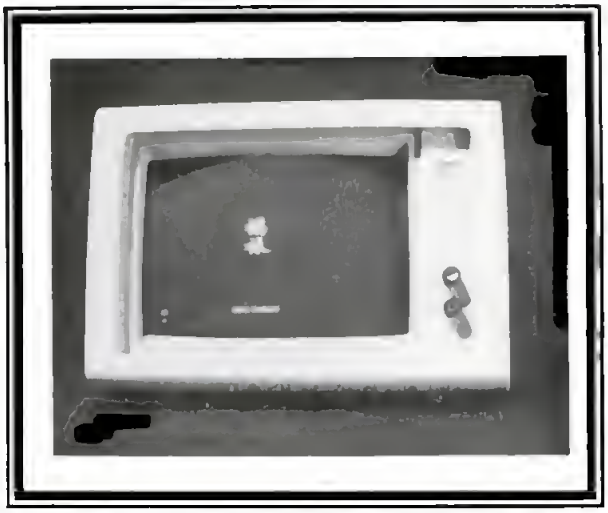

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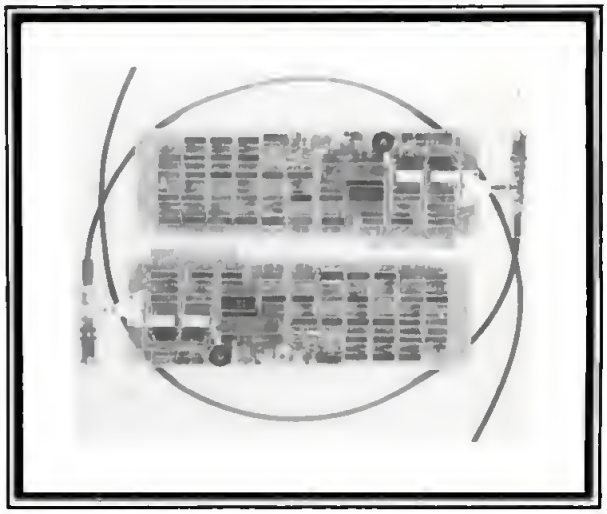

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Quala	Blackjack	
Sirius	Call to Arms	
	Space Eggs	
Sorcim *(ISA)*	SuperCalc	
	Spellguard	
	Spellguard (CP/M-86)	
	Spellguard Law	
	Spellguard Law (CP/M-86)	
	Spellguard International	
	Spellguard International (CP/M-86)	
Strategic Simulations	Warp Factor	
System Software Services	PCModem	
TaxaSoft	Bersatext	
	Set the Hostages Free	
VisiCorp	VisiCalc 256K	
	VisiDex	
	Desk Top/PLAN	

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AST Research	IBM-PC Combo - Plus Card	
	each board comes with one Parallel Port, one Serial Port, Clock Calendar (automatically enters date) and Memory	
	64K	$ 449.00
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	256K	779.00
	64K upgrade kit	120.00
Argus	Legge for MB-86	11.00
Compu Cable	Friction Feed Kit for MX-70/80	77.00
Curtis Manufacturing	PC Pedestal for IBM	77.00
	Extension Cables for IBM Display	44.00
Electrohome	RGB Hi Res Monitor	921.00
	Cable for IBM-PC	46.00
FTG Data	Light Pen	139.95
	Demo/Games Diskette	29.95
Hayes	Smartmodem	237.00
	Starware Smartmodem-to-PC Cable	27.00
	System Software Services (SSS) PCModem	49.95
	Package Price for Above 3 Items	299.00
ID9 Printers	Micro Prism 80 with dot-plot, cut sheet feed	719.00
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	Prism 132 (printer only)	1136.00
	Optional modules for Prism 80 and 132:	
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	Cut Sheet Feed (Friction)	130.00
	Prism Color	349.00
	Parallel Cable for Prism Printer to IBM-PC	56.00
	Prism Software for IBM-PC	56.00
	Cassette Feed Module	349.00
Kraft	Joysticks	51.00
	Paddles	37.00
MDI	Computer-Mate Desk 4'	346.00
	Computer-Mate Desk 5'	421.00
	3 Ft. Keyboard Ext. Cable	28.00
	3 Ft. Mono and Power Ext. Cable	48.00
McGraw Hill	*An Introduction to VisiCalc Matrixing with Apple and IBM*	
	Hands on Basic for the IBM Personal Computer	
	8086 8088 16 - Bit Microprocessor Primer	
Micro Instructional	Training Tapes for the IBM-PC	
	IBM PC DOS	
	IBM PC PowerText	
	IBM-PC VisiCalc	
	IBM-PC CP M-86	
Microsoft	64K RAMCard (with RAMDrive)	
	128K RAMCard (with RAMDrive)	
	192K RAMCard (with RAMDrive)	
	256K RAMCard (with RAMDrive)	
	64K RAMChips upgrade package	
Minimagic	Reference Card	
Quadram	Quadboard *each board comes with one Parallel Port, one Serial Port, Clock Calendar (automatically enters date) and Memory*	
	64K	
	128K	
	192K	
	256K	
	64K upgrade package (9 chips)	
	MicroFazer *Printer Buffer Parallel to Parallel*	
	8K MicroFazer	
	16K MicroFazer	
	32K MicroFazer	
	64K MicroFazer	
	8K upgrade package	
	MicroFazer Serial to Parallel and Serial to Serial	
Symtec	Light Pen with book of 15 programs for IBM-PC	
TG	Joysticks	
Techmar	Call or write for list of products	
Xedex	Baby Blue CPU -	
	Baby Blue CPU - with Wordstar and Mailmerge	
	dBase II for use with Baby Blue	

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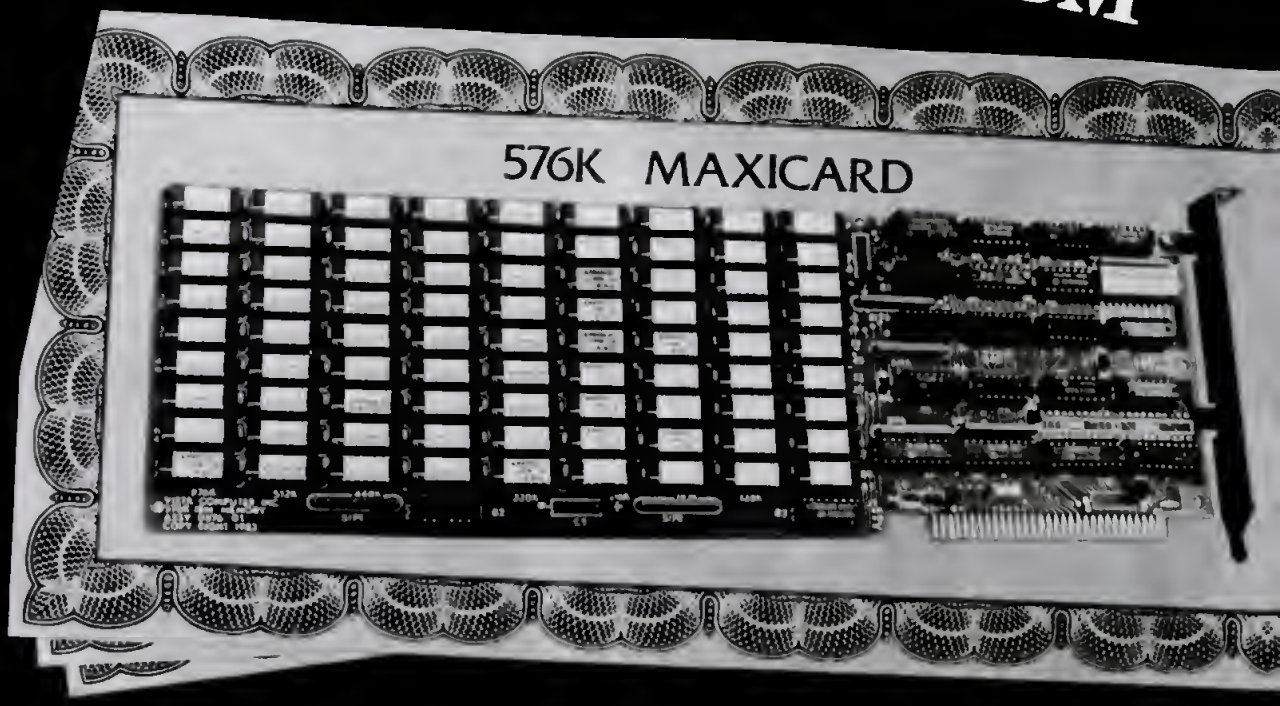

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Becoming A Savvy Shopper

A microcomputer can't absolve the woes of bad business practice, but surveying the market before you buy and selecting a system to meet your needs may prevent newfound grief.

It is widely believed that computers solve problems, but in reality they tend to make them worse. Accountants who cannot keep their books in order by hand will not improve their skills just because they can do thousands of calculations per second. Some businesses will foh off as computer errors ingrained shortcomings in their billing or customer service areas.

These twin misconceptions—savior and scapegoat—are responsible for more unhappy marriages between computers and people than any real obstacles to automation, and there are plenty of those, say the experts.

Most businesses will have to upgrade paperwork to electronic information handling just to stay competitive in the 1980s. Vendors are aware of that, but they also know that microcomputers can be big-ticket items in small businesses. As with most retail goods, hefty commissions are made in exchange for putting in long hours, advertising heavily, and always returning a potential customer's phone call. Vendors have a habit of insisting that their particular machine is perfect for your business. It may be perfect for your needs, but it may also happen to be the machine that carries the highest markup.

The first and most important rule for a new customer is "Know thyself." Know what your business or personal application is. What is it about your business that needs to be automated?

Perhaps that sounds like gross oversimplification, but it is a question few people really bother to ask themselves. It helps to remember Peter Drucker's immortal (and possibly apocryphal) words to the drill-bit manufacturers. Said the famous management consultant: "Your customers aren't interested in buying ¼-inch drill bits." Before the astonished directors could recover, he added: "What they want to buy is ¼-inch holes."

If you understand your own business

Illustration: Jack Desrocher

Look-Alikes and Co-Processors

Soon to fill the market is a new generation of personal computers with features comparable, compatible, and internally akin to the PC but without the IBM label.

Many new microcomputers have been or will be announced this year that use the same 16-bit central processing unit (CPU) chip as the PC and will run software under identical operating systems—PC-DOS and CP/M-86. It may soon be possible to buy a PC without having IBM's label on it.

But there is one difference: Many of the new computers also have an 8-bit CPU chip that will use the vast libraries of existing 8-bit programs.

When IBM announced the technical parameters of the PC, some pundits were napping. Most were impressed that IBM had entered the market, and they predicted strong PC sales on the strength of IBM's name and reputation. They were reluctant to predict popularity on technical merits alone, because the PC did not represent a great leap forward but an inclination toward future capacities.

IBM selected a 16-bit CPU chip and promoted new programs that were more or less adapted from those written for 8-bit CPUs. With a new operating system (PC-DOS) that, at least superficially, resembled CP/M, and the upgrading of CP/M to a true 16-bit capability, the PC could be enough of a 16-bit computer to handle future software.

The vast majority of microcomputer software is written for 8-bit CPUs and operating systems, and competing manufacturers took advantage of that fact in their own designs for new machines. (A PC owner can buy a plug-in printed circuit board with an 8-bit CPU on it, e.g. Baby Blue, to run 8-bit software on the PC.)

Some new micros are PC look-alikes. The Victor 9000, for example, has the same Intel 8088 CPU chip, and runs with PC-DOS and CP/M-86; it differs in having as standard equipment some items that are optional on the IBM: serial communication ports and disk drives with greater storage capacities.

Other micros, however, are being introduced with two separate CPUs—one 16-bit and one 8-bit—so a user can run many existing 8-bit programs while waiting for someone to invent or perfect the next-generation 16-bit programs. It's like having a car that runs on both gasoline and propane: You may be convinced that the cleaner propane is the fuel of the future, but it's reassuring to be able to drive up to a regular old gas station in the meantime.

One such machine is Zenith's Z-100, which was unveiled at the National Computer Conference in June. While it is unlike the PC in appearance, it is very similar internally. It uses the same operating systems, indistinguishably modified, and the same 16-bit CPU (the Intel 8088). Inside, however, there is also an 8085 chip that works much like the Z-80, which Zenith (and its subsidiary Heath, of Heathkit fame) uses in its popular Z-89, 8-bit micro.

Users can run nearly all the existing 8-bit CP/M software they would have bought for the Z-89 on the new Z-100. Almost any 16-bit software they buy new will be compatible with the 16-bit software PC users will buy. The only major difference will be that the two machines will record information on diskettes in slightly different ways, so the same disk will probably not work on both. But that will be true of practically any machines not made by the same company (it is even true among different computers made by IBM).

A new generation of first-time users and many 8-bit computer users who want to upgrade to 16-bit systems will be able to use the same machine. Does this spell trouble for the PC? Probably not. IBM, with its enormous name recognition and reach, will at least be tried and tested by prospective buyers. Victor, Zenith, and the others will have their work cut out for them convincing users that their machines are comparable in features and compatible in software.

Just as *VisiCalc* spawned a generation of calcalikes and visiclones, new computers will use PC-DOS and CP/M-86, and will compete directly against the IBM PC.

—*H.G.*

that thoroughly, it may be time to automate it. Computers come in many sizes and shapes; selecting the right one is like buying a new suit. Even if you like the material and draw status from wearing a designer's label, make sure it fits.

Buying a microcomputer may be easier than buying a larger mini or mainframe, but the principles are the same. The lower price on the micro fools some people into thinking all they have to do is walk into a retail store, try out a few machines, and take one home with them. It would be wiser to follow the advice of people who have been consultants in the minicomputer and mainframe markets, because, although those systems represent ten or 100 times the financial investment, the routine for selecting and comparing machines is in every way comparable.

THE INITIAL decision to purchase a computer really depends more on the nature of the business than on the ability to pay for it.

Know What You Want Your Computer to Do

Paul Kraabel, a computer consultant in Seattle, finds that the initial decision to purchase a computer really depends more on the nature of the business than on the ability to pay for it. According to Kraabel, "A distributor in a certain income or sales bracket may be able to afford it while a manufacturer doing the same dollar volume of sales may not." The distributor is really in the information business, keeping track of the movement of goods, while the manufacturer is typically adding value to raw materials or assembling parts. "Know what you want your computer to do, and about how much it should cost to do that before you solicit proposals from computer salesmen."

Big-computer customers have done this for years, but even for the purchase of a micro it is a good idea to draw up a request

Advertisement

NEW

Software Breakthrough...

NEW *QUIKPRO + PLUS* WRITES PROGRAMS FOR YOU IN MINUTES ON *YOUR* Micro

Technical Review
by Wayne Hepburn

QUIKPRO + PLUS is a new breakthrough in software for microcomputers from ICR-FutureSoft.

Until now, whenever you wanted a new separate program in BASIC (Microsoft Basic/MBasic/Basic 80/Oasis Basic), you had to spend a lot of dollars for it, or a lot of hours creating it (if you have the know-how). That's all in the past now.

Anybody who can turn on a computer can write a program, quickly, with this new *Quikpro + Plus* software which generates programs for you. *Quikpro + Plus* is the invention of Joseph Tamargo of Florida. His brilliant approach to program writing allows you to tap the real power and speed of your microcomputer, and it is about time this happened.

I interviewed him to find out more about *Quikpro + Plus* and pass this valuable information to you. He told me "The best part of this software is that it gives you a separate custom program every time you use it. The resulting program is produced, error-free, in BASIC (Microsoft Basic/MBasic/Basic 80/Oasis Basic, as appropriate to your system) for you by *Quikpro + Plus*. What's more, you can list your new program, look at it, see what makes it tick, and modify it as you wish."

You can also, customize, enhance, alter, and even copy the programs you create with *Quikpro + Plus*. This is because programs created by *Quikpro + Plus* are structured, easy to follow, and include many REMARKS statements right in the program listing. I don't know of any other software with the flexibility and ease of use I found in *Quikpro + Plus*.

HUNDREDS OF APPLICATIONS...

For Education, Business, Hobby, Home, Science, Personal, etc. a partial list includes programs like these: Financial Forecasting, Expense Planning, Data Access and Retrieval, Modeling, Record Keeping of all kinds, Statistical Data Banks, and much, much more. *Quikpro + Plus* cuts the time it takes to generate a new custom program down to a few minutes. That's true. I saw a letter from a user who created a separate program in Basic within fifteen minutes after reading the clear, simple, complete Documentation & Operating Manual for *Quikpro + Plus*. The software will generate File Handling and Data Entry Programs in a file format, drawn right on the screen by user. Programs created by *Quikpro + Plus* produce standard ASCII Data Files allowing data to be easily accessed by other programs, other micro's, and even main frames.

HOW IT WORKS...

The operation of *Quikpro + Plus* is simple and easy. On your screen you answer questions which appear in plain English. The answers generate error-free Filing & Data Entry Programs for you...instantly. This completely eliminates the tedious and time consuming development you normally go through to write a program. Since the instructions are right on the screen you don't need any programming skills to operate *Quikpro + Plus*. Quickly, you get a fully independent new program ready to run on your system. After you create the new program you can remove *Quikpro + Plus* and stick it on the shelf until the next time you create a custom program.

PRINTS REPORTS & MANUALS...

There is a full report printing capability put into your new separate program by *Quikpro + Plus*. You can even print out in formats different from the File Format you used without altering the Record Data. Or you can selectively print portions of Files or selected fields from selected Records. Just about anything you want can be reported out from the Data Base associated with the new custom program you wrote.

PERFORMS CALCULATIONS...

You can perform all manner of computations among various fields in each record. You can selectively calculate and print resulting data only, or Data Base and results, or alter Records by calculation results, and so forth. The possibilities seem unlimited. And keep in mind that the power and features I am talking about end up in the separate new custom program *Quikpro + Plus* writes for you.

This software is ready to ship immediately and you can start writing programs the day you get in. In fact, ICR-FutureSoft guarantees your satisfaction or you can return it for a full refund in ten days after delivery. How's that for confidence? Mr. Tamargo said "There isn't any risk to us...our product *works* like it's supposed to work and users are very well satisfied. We are glad to guarantee satisfaction."

You get *Quikpro + Plus* by mail or phone directly from ICR-FutureSoft. Just write them, or call their Toll-Free phones and specify your model and version requirements from the list that follows:

For CP/M with Microsoft Basic $259
(same as MBASIC/Basic 80)
APPLE • INTERTEC • NORTH STAR • OSBORNE • XEROX 820 • HEATH/ZENITH • CROMEMCO • ALTOS • RADIO SHACK TRS80 • or any system reading CP/M 8" Single or Double Density.

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IBM/PC • WANG

For TRS/DOS Operating System
Radio Shack TRS80 Mod I, III $149
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Software Dealers can handle this software. Contact ICR-FutureSoft Customer Service at 1-904-269-1918 or write.

Assessing Your Priorities

Are you a status seeker or does your business really need a computer?

Roy Gillette writes a monthly column for the *Northwest Computer Society News*. He poses some tough questions for any business person who must decide whether, or how far, to automate with a computer. With some adaptation, here is his self-test. There are no "right" answers.

I see a computer in my business as a way to

- ☐ impress my customers.
- ☐ control costs or increase revenues.
- ☐ prepare for the coming "information revolution."
- ☐ do what we already do manually but do it more efficiently.

If I had a computer, I would keep it

- ☐ on display, to show it off.
- ☐ hidden as just another office tool.

When I think about computers, what worries me most is

- ☐ how I could find the time to run it.
- ☐ how I would get it fixed if it broke down.
- ☐ how I would print reports on time.
- ☐ whether it would be powerful enough and, if it were not, whether it could be upgraded without excessive cost.
- ☐ that my employees or partners would be afraid of it.

Compared with hardware costs, the software programs I will need should cost how much?

- ☐ Nothing extra.
- ☐ 10 to 25 percent.
- ☐ 50 to 75 percent.
- ☐ 100 percent plus.

When I need further programs, I will

- ☐ write them myself.
- ☐ hire a local programmer, working at his or her own pace, part-time.
- ☐ contract for the work to be done by a consultant or other software professional, full-time.
- ☐ have an employee or a partner take a course in programming.
- ☐ buy prepackaged programs by mail or at a computer store.

How committed am I to working with and learning about the computer in my business? How many hours would I be prepared to spend each week?

- ☐ Up to 4.
- ☐ 7 to 10.
- ☐ 14 to 20.
- ☐ 28 plus.
- ☐ Every night.

After taking this test, were you struck with any new thoughts about computers that had not come to you previously?

—*H.G.*

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Priority One Electronics has burned Tandon's Price sheet with our special purchase of Tandon TM100-1 5¼" 40 track single sided, double density disk drives. The TM100-1 is the same drive used in IBM's Personal Computer. We purchased a large quantity of new, factory sealed drives from a large OEM who simply bought too many. This is strictly a "one-shot" deal, when these are gone there will be no more. In fact, we are selling these drives below our regular cost as a volume purchaser. At these low prices these drives will not last long. So, if you ever thought of expanding the disk capacity of your computer, now is the time.

Tandon drives are known throughout the industry for their quality and reliability. That is why major computer manufacturers such as IBM have chosen Tandon drives for inclusion in their products. to add disk storage to your PC, buy the controller and cables from IBM and then purchase the disk drive from Priority One and save hundreds of dollars!! (For more information on how easy it is to install the drives, see the first issue of **PC Magazine**, or the first issue of **Personal Computer Age**)

For those of you who want double-sided disk storage, we also have the Tandon TM100-2 double sided, double density drive. Order part number **PITNDTM1002** at **$295.00** each, 2 or more: **$270.00** each. We also have a complete line of printers, diskettes, and other IBM peripherals, please call for more information.

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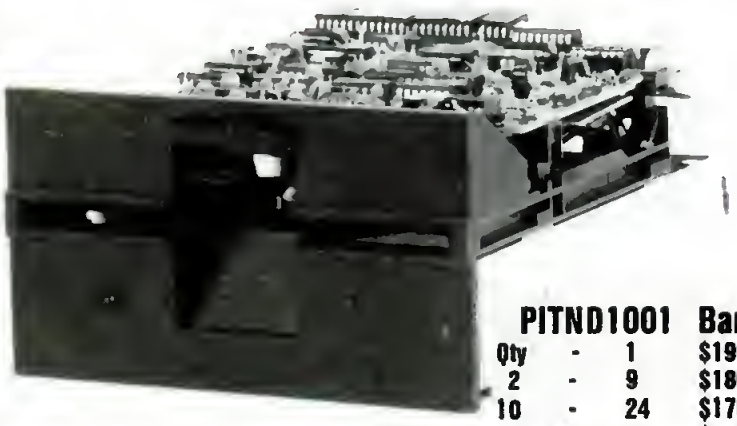
Current Requirements	900mA/ 600mA



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for a proposal (RFP)—a description of exactly what you have in mind, as free of jargon as possible. If you need a spreadsheet program that accepts as many as 50 column entries and 50 row entries, make sure the RFP says, "spreadsheet minimum capacity 50x50 matrix" or words to that ef-

MAKE UP a benchmark test—a real-life example of the kinds of things you will be doing.

fact, rather than "spreadshaet for sales projections." Application is important, but it is the capacity you want to ensure.

Word Processing Needs

If you need printouts comparable to manuscripts from an electric typewriter, specify "letter quality printer with daisy wheel or comparable impact printing element." A vague expression such as "good quality printer" can be misintarpreted by salespeople. Many dot matrix printers are of good quality, but they cannot substitute for impact printers in some applications, and they cost less than half as much, so the vendor's proposed system price may be too low.

Make up a benchmark test—a real-lifa example of the kinds of things you will be doing—and take enough material with you to produce a realistic demonstration. Bring real data for spreadsheets and real text for word processors—what you would use if you already owned tha machine. Do some real work, and you'll get to know not only the computing capabilities, but tha argonomics as well: the feel of the keyboard, the angle of the screen, the orientation of tha disk drives, and the convanience of the controls.

In Kraabel's experience, "Many first-time buyers go in blind. If a man found a diamond on the sidewalk, he wouldn't go to the first pawnshop on the corner; he'd try to find out what it was worth. Those who are supposed to be smart business people often buy a computer from the first guy they see.

"Here's an example of what I mean.

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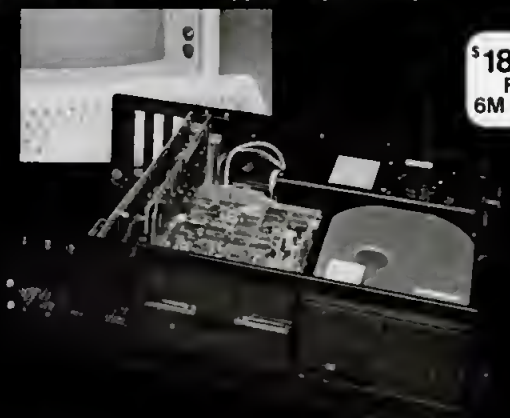

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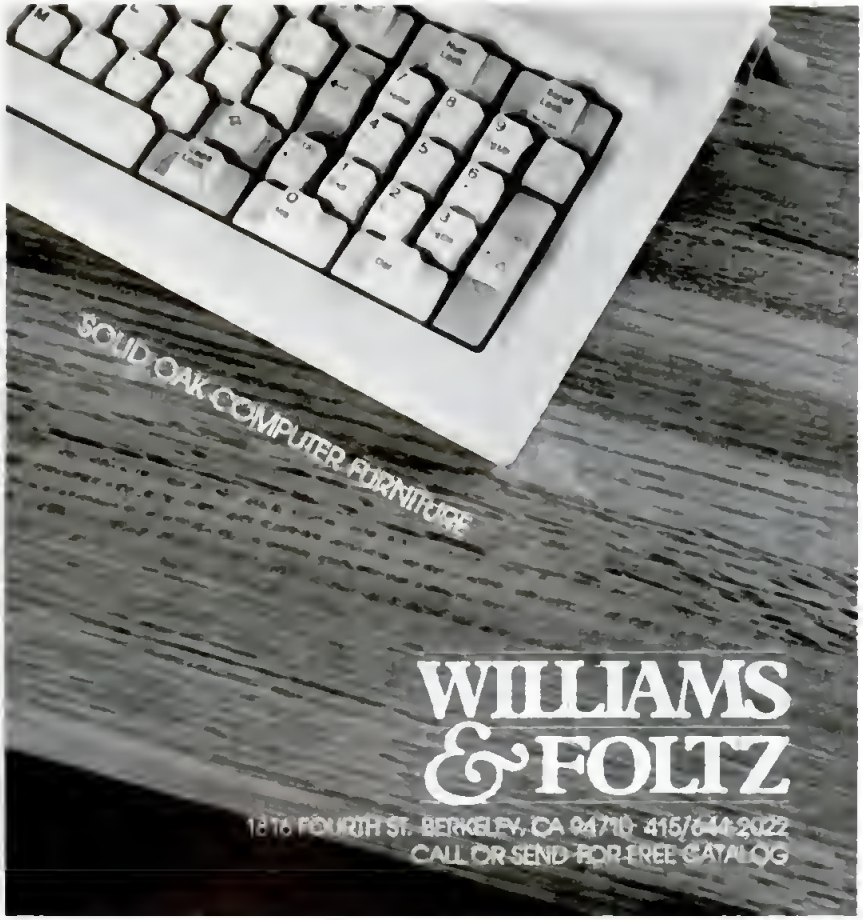

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Practically every big computer company claims it's number two after IBM. You've got to ask: How? In what way? Sales? Speed of computation? Service staff? Plug-compatible peripherals? Applications software? Probably 100 companies are making computers right now, but in 10 years, 75 percent of them will be gone. They'll merge, be bought out by larger companies, or go bankrupt."

GOOD service can tip the scales in the choice between competing machines.

Hiring a Consultant

Should you hire a consultant to help assess your needs? If no one in your firm has the expertise, or if you are unwilling to take on the extra work, a professional consultant may be a good investment. According to Kraabel, "A consultant can evaluate competing claims and guard against someone in your business building an empire at your expense. At the very least, a consultant can offer a second opinion."

Kraabel suggests choosing consultants in the same way you would choose vendors. "A real expert," he says, "has four qualities: experience, common sense, references, and especially communication skills. Without communication skills the others aren't worth a damn. The best kind of consultant will be someone with expertise in your own field: a legal systems specialist if you are a lawyer; an engineering systems specialist if you're an engineer. If you don't get help from someone who understands your needs, you'll wind up buying a Ferrari when you should have bought a school bus."

Another sound business practice, although some customers are reluctant to follow it, is to delay paying the full amount for a system until you are completely satisfied it works. One writer who owned an electronic typewriter was told that the IBM PC could drive it as a printer. When he bought his PC, he withheld full payment for the system until the interface was

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Amdek

installed on his machine and the PC shown to print through his typewriter as was promised. When it did, he gladly gave the vendor the final check.

"People forget they have a lot more than money to spend," says Jefferson L. Brady, another consultant from Seattle, who points out that customers have what

IF YOU don't get help from someone who understands your needs, you'll wind up buying a Ferrari when you should have bought a school bus.

he calls "commodities" they can use to strike bargains with vendors.

"Ask yourself," he says, "Is my firm the first of its kind to automate in this way? If you are a leader in your field or have high standing in your community, you may be able to trade prestige for software packages or for some custom applications."

Selecting a Peripheral

The same procedures apply to selecting peripheral equipment for existing computer systems: know what you need, ask for competing bids, and get a satisfactory demonstration. Printers, disk drives, plotters, and other add-ons should match the needs of your business. You can easily overwork an inexpensive little printer, and it will break down. Disk drives almost always prove to be inadequate and are probably the most often replaced or upgraded peripheral in the industry.

Maintenance Contracts

Ask about maintenance contracts. Plan on spending approximately 10 percent of the purchase price per year (or 1 percent per month) on keeping it running. Microcomputer components are very reliable, but they are not infallible. Some vendors offer 24-hour house calls; others require you to bring the machine into the shop (service costs less that way). You may or

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may not get a loaner while your computar is out of service—ask about that too. Good service can tip the scales in the choice between competing machines.

It may be subtle, but don't ignore the chemistry between you and your vendor. Even if a particular computer is perfect for your business, the personality or attitude of the salespeople may turn you off, and it is not wise to ignore that impression. If you get a good product at a good price, you will be doing a lot of subsequent business there, so you should be comfortable visiting that shop and talking to the people who work there.

YOU CAN easily overwork an inexpensive little printer, and it will break down.

Apple complained recently that mail-order houses are taking customars away from local vendors even though service, personal attention, and training are crucial to new computer users. People who save money by buying through the mail are still going to computer stores for help. Apple has cut off mail-order suppliers (and gained some lawsuits in the process), while retailers are stressing service instead of price competitiveness. If you are already an experienced computer user, you may be able to order products through the mail and install them yourself, but don't expect help from a vendor who didn't sell you anything.

With all these factors in mind, the selection and maintenance of a computer still depends on a customer's ability to understand what the computer can and cannot do for the business. A very fast adding machine does what someone tells it to do; it does not think, and it does not make company policy.

If a business is running well, computers can help it run better by processing words or information quickly, and presenting them in helpful ways. But they cannot solve a company's problems, and they cannot replace hard work or careful, human understanding. */PC*

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est Program's Personal Computer/Personal Finance Program is a sophisticated accounting system designed for individual use to specifically match the power, quality, and versatility of the IBM Personal Computer. The PC/PFP makes it possible for you to know as much about your personal finances as well-managed companies know about theirs. Before the Personal Computer, an accounting system as sophisticated as the PC/PFP would not have been possible without complicated journals, double entry bookkeeping, trial balances, extensive filing, and hours of manual drudgery. Now it is possible for you and your Personal Computer to keep and maintain intricate and highly useful financial information and reports in little more time than you may now be spending balancing and reconciling your checkbook and bank statement.

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Keeps detailed, accurate, and completely identified records of income, expenses, and budgets. Each item is filed into one of the 43 categories you have established to suit your needs. Once the data is in the system, the Personal Computer performs all accounting functions needed to provide a wide choice of information and reports so you can wisely manage your money.

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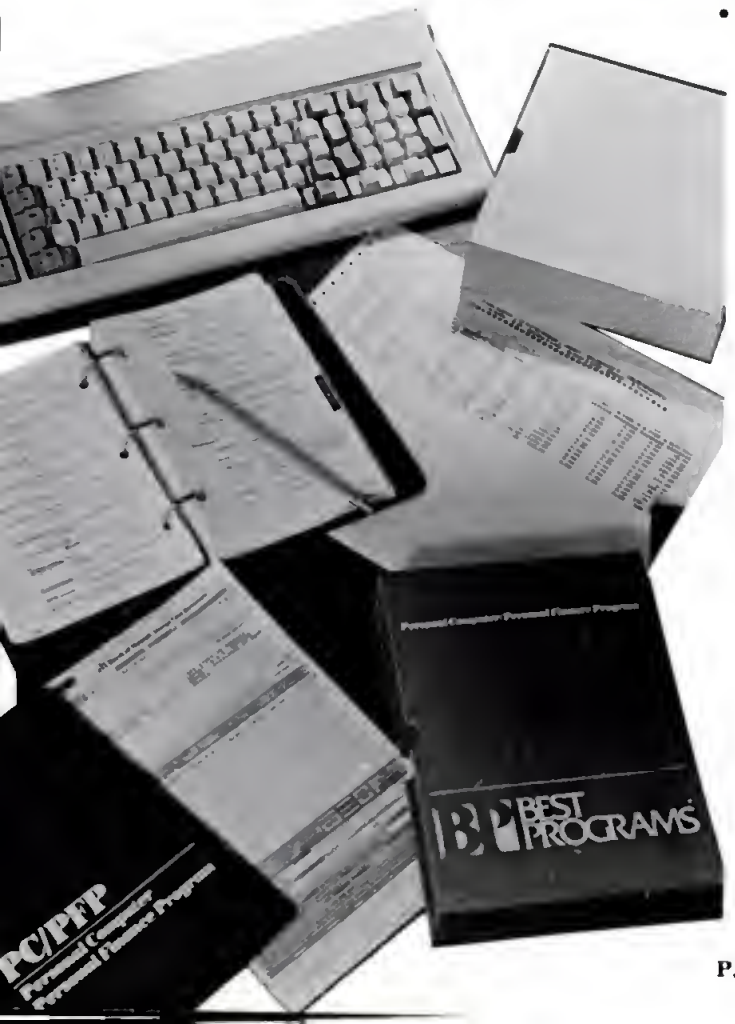
- Prints 80, 132, or 233 (with an MX-100 printer) column condensed-character spreadsheet reports to suit your configuration or needs.
- Sorts, tracts, and totals tax deductible items (nine different categories).
- Monitors your credit card payments and debt.
- Reconciles your bank statement using an on-the-screen form. You simply fill it in. PC/PFP calculates any discrepancy and tells you the amount to help you find the source.
- Maintains and balances your checkbook. You have instant checkbook access when ever you need it. Keeps a year's checkbook on a single diskette.
- Automatically rolls over financial information from year to year. Keeps many years of financial statistics on a single program diskette.
- Displays over 90 bar graphs (in color if you wish) of cash flow, budget performance, income or expense category trends, or checkbook balances. These bar graphs let you instantly visualize income, spending, and budget patterns and trends.



System Requirements. PC/PFP Requires an IBM Personal Computer with a minimum of 64K RAM, one or more diskette drives and IBM-PC DOS. For display purposes you have the option of the IBM Monochrome Display, an 80 column black and white or green monitor, or an 80 column (high resolution) color monitor. (Or use your color TV with an RF modulator to view the bar graphs in color). Reports may be printed on the IBM-PC, Epson MX-80, MX-100, or other compatible printer.

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The Personal Computer/Personal Finance Program is available from ComputerLand, other IBM PC dealers, or directly from Best Programs. Send your name, address, and check or money order, to the address below; or order directly by phone. The cost is $95 plus $2.00 postage and handling. Virginia residents add $3.80 sales tax. VISA and MASTERCARD cards are accepted (include number and expiration date).

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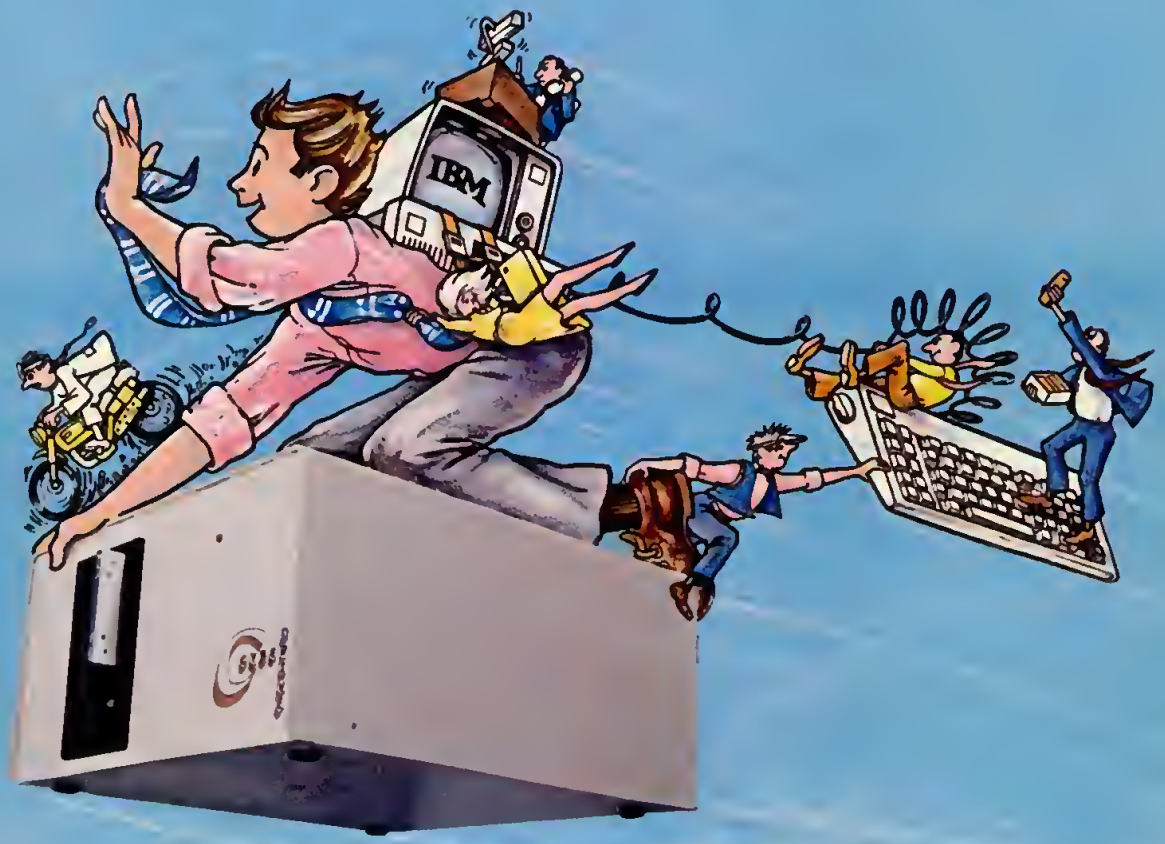

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Getting Your Money's Worth

Feeling a tinge of guilt about the extravagant computer you purchased? Find out how owning a PC can be both a tax-deductible enterprise and a way to get a return on your investment.

A year ago you couldn't buy an IBM Personal Computer. But according to *Business Week*, IBM sold 500,000 the first year, and more than 1,000 different products—hardware, software, and firmware—are available on, with, and around the PC. This explosion in computer use is unprecedented.

It has propelled the IBM PC into becoming the microcomputer in the business world. It also means that you, as an owner or potential owner of a PC, have a powerful, easy-to-use, and economical tool with which to manage your personal finances and perform other chores around the house. You won't have to become a programming whiz to get the software you want; a good variety of software is available now, and a great deal more is in the works.

To get the most out of your PC and the investment it represents, you should learn about the ways you can use it to save time and money. You may already know, for example, that your PC can help you make better decisions when the time comes to buy a home, a car, or life insurance. The PC may even increase your wealth by helping you pick better stocks and bonds or manage your real estate holdings more effectively.

This article will outline many of the uses to which you can put your PC. I hope it will stimulate you to think of many others. In fact, the potential computer applications around your home and in your personal financial management are not limited by the software or hardware, but

by your needs, your free time, and your imagination.

Managing Your Budget

We all need to eat, sleep, and get to work, and we spend a substantial portion of our income providing for these needs. How we go about managing our spending can make the difference between ending the month with a night on the town or over a plate of cold beans. The key to controlling spending is planning, and a budget is the key to implementing that control.

A number of software distributors offer programs to help you budget effectively. One such program is *Personal Financial Systems* from Design Data Systems. You can also use *VisiCalc*, *SuperCalc*, or another of the electronic worksheet programs to set up a spreadsheet tailored to your specific needs.

Your budget should have categories for fixed month-to-month expenses such as rent, insurance, and automobile payments. In addition, it should contain other categories for variable expenses such as food, clothing, and entertainment. The difference each month between your expenses and your income is potentially your savings. Savings should come out of your check before any other expense or they probably won't come out at all.

To manage your budget you will need to keep close track of actual expenditures. You can set up a *VisiCalc* worksheet as a check register or buy one of the checkbook programs such as *Doughflo* from Alphanetics Software to perform that task. Keeping track of your checks will let you know how much money you have in the bank, aid in monitoring your budget, and form the basis for the records required to prepare your tax returns.

You will also want to use your computer to calculate your net worth (see "How Much Are You Really Worth?" PC, August 1982). You can customize a spreadsheet or acquire a specialized program such as *Financier* from Financier Inc. This program performs a net worth calculation as part of a personal financial package that includes a budget, a tax and credit card record, and a property inventory.

Your net worth will tell you where you stand financially. It is the starting point for planning for future goals, such as buying a home or retiring. You can use your computer to build a model in which you consider your savings rate, the rate of return on your investments, and the inflation rate to see where you will be financially at some point in the future.

A program like *Household Inventory* from N. F. Systems can be used to list your valuables for use in your net worth statement and as a record for insurance purposes. If this is your insurance record, be sure to keep a copy of the diskette in a safe place, away from your home. In that way you will still have a record of your possessions to make an insurance claim should your home be destroyed by fire, earthquake, or other natural disaster.

Taxes

While a PC may not be able to do anything about the inevitability of death or taxes, it can certainly take some of the sting out of preparing your tax forms. It might even lower your tax bill.

The first, and perhaps most difficult, part of preparing your taxes is keeping good records. This is one area in which your PC can really help out. You can use a data base management program such as Software Laboratories' *Mini Data Base Manager* or the larger *Database Manager* as an "electronic shoe box" in which to file your tax-deductible expenses. Be sure to use this electronic filing system in conjunction with your check register, and be sure to save the actual receipts for later reference, if necessary.

Items in a data base can be sorted by a

A Guide to Financial Software

The following is a list of software and manufacturers mentioned in this article.

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number of different codes. In the case of tax deductions, you will want a code for each deductible category such as medical expenses, charitable contributions, taxes, interest, and business expenses.

When it comes time to prepare your tax returns, you can utilize a specialized program such as *The Tox Manoger* from Micro Lab. This program will calculate your taxes in a number of different ways—with and without itemized deductions, with and without income averaging. You can try different approaches and choose the one that minimizes your taxes. The program then prints the results in IRS format, ready to send off to Uncle Sam.

HOW WE GO about managing our spending can make the difference between ending the month with a night on the town or over a plate of cold beans.

If you keep track of your tax deductions and your income regularly, you can check your tax liability at different times during the year. You will then have the information necessary to make estimated tax payments, and you will know whether some further action, such as a tax shelter, is a good idea for you. By the way, the program you buy to do your taxes is itself a tax-deductible expense.

Investments

Most of us have a savings account and maybe an Individual Retirement Account (IRA). You may even have a portfolio of stocks and bonds or some income-earning real estate. Whatever you own, a PC will be a powerful tool when it comes to managing your investments. It simplifies record keeping for tax purposes, and it helps you make better, more well-informed decisions. And it is tax deductible for that fraction of the time you use it to manage your investments.

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To use any of these services you will need a modem and an asynchronous communications adapter in addition to communications software. You will also have to pay minute-by-minute connect charges when you are on the system. These vary with the time of day; the highest rates are charged during business hours and the lowest nights and weekends.

Every investment requires two decisions: when to buy and when to sell. Neither decision is an easy one. The old saying, "Buy low and sell high," is certainly good advice, but it is difficult to practice consistently.

Most professional decision makers utilize a great deal of information. This is true whether the basis for a decision is as straightforward as "sell if the stock falls 10 percent below its purchase price" or as complicated as Joseph Granville's "On Balance Volume System." If you understand the rule, your computer can be programmed to give you the same information as that available to the professionals.

Programs that help you perform this analysis include *Personal Investor* from PBL Corporation and the portfolio monitoring program on The Source. No one can guarantee you will be a winner in the stock market, but your PC can give you instant access to important information, and it can analyze that information with many of the same models professionals use.

If you don't own stock but would like to experience the exhilaration of picking a winner (or the terror of watching your life's savings melt out of sight), *Millionoire* from Micro-Z Applications is for you. It is a combined game and tutorial that teaches about the stock market while offering the chance of becoming a millionaire (or a pauper), at least on magnetic disk.

If you invest in real estate, you can use your PC to evaluate potential deals. Simple Soft's *Quickcalc Real Estate Investor* is one of several programs available for this purpose. Once you have obtained a piece of income-producing property, the PC can keep track of incoming rental payments as well as maintenance expenses, depreciation rates, and interest payments. Accurate record keeping will make it easier to monitor the performance of your investments and prepare the voluminous tax returns associated with owning real property.

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IF YOU have already named your progeny, you can use this program to help you pick a classy name for your pet boa constrictor.

If you have a modem and a communications card, the world of electronic newspapers, vast data bases, electronic mail, shopping, and bulletin boards is open to you with a subscription to The Source or CompuServe. You can play multiperson electronic games with people across the country or exchange child-rearing ideas with someone in another state. You can even drop me a note at *PC* (70370,532 on CompuServe and ST0948 on The Source).

Finally, there is a program for you parents-to-be—*Whot Do We Nome The Baby?* from Metamorphics, Inc. This program will be a great help to those who are so stuck in the world of computers they can't think of any name besides Hal. The program has 2,500 names in its data base, and you can get lists of prospective names according to many different criteria. If you have already named your progeny, you can use this program to help you pick a classy name for your pet boa constrictor or your kid's pet rat.

This article has surveyed some of the ways you can put your PC to work. But if you didn't find the applications you have in mind, get busy. Thousands of other users across the country are waiting for your program. */PC*

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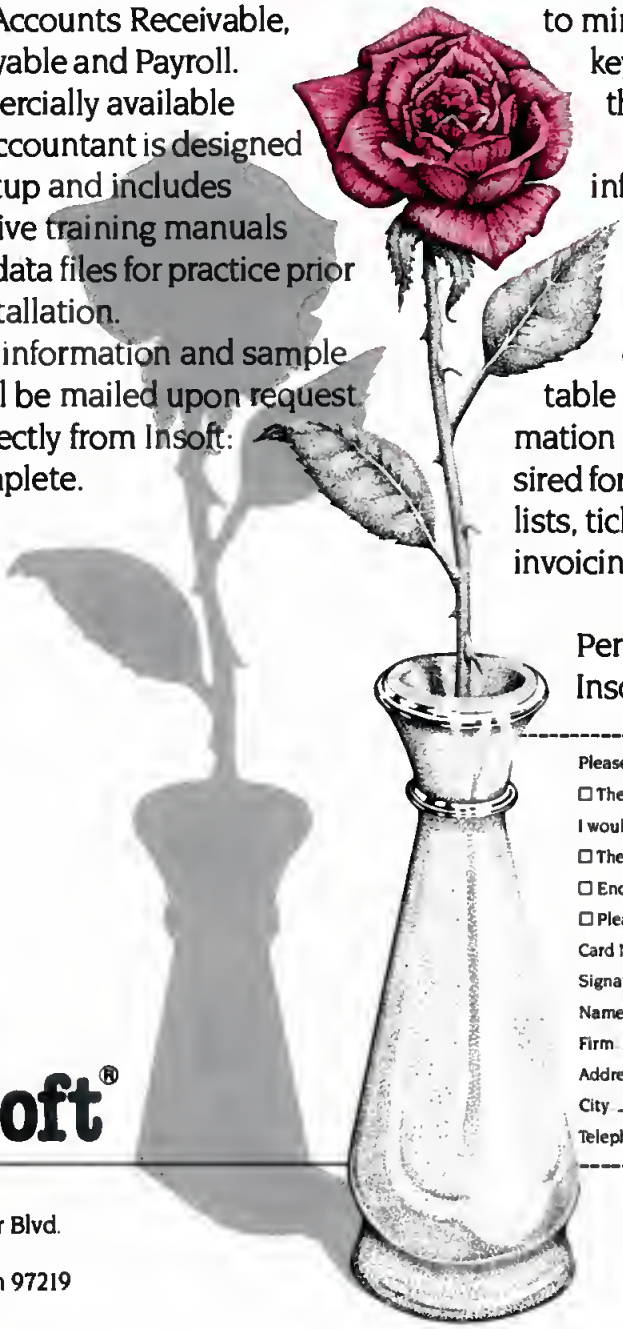

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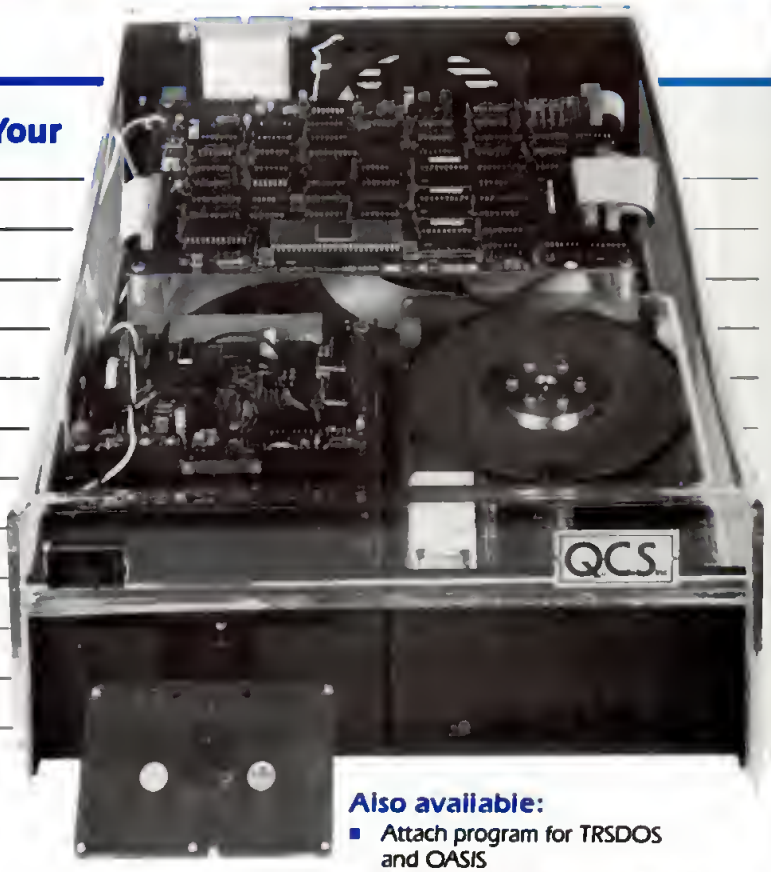

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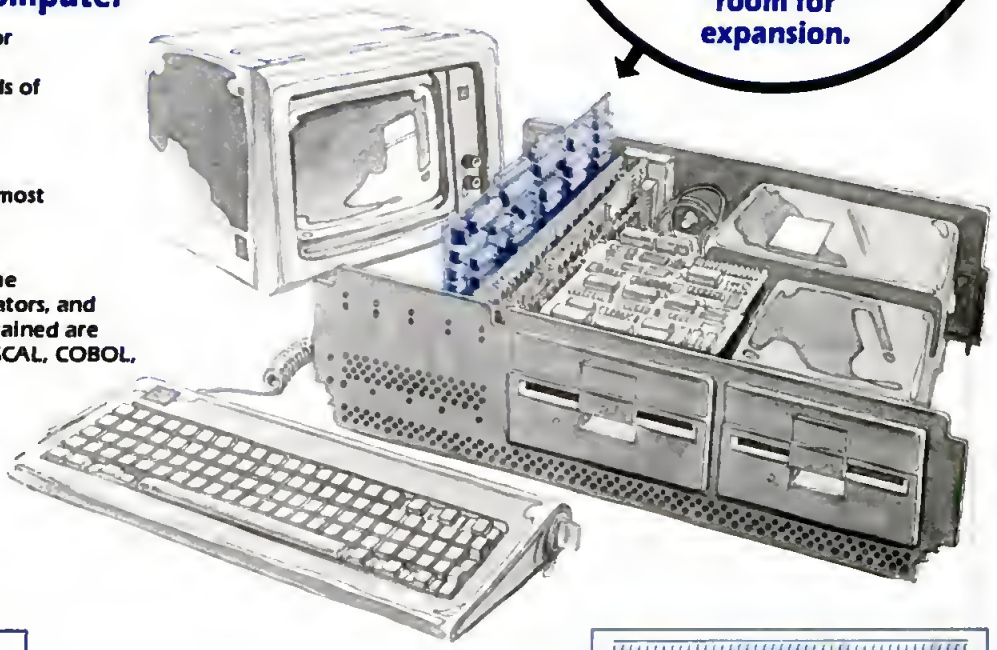

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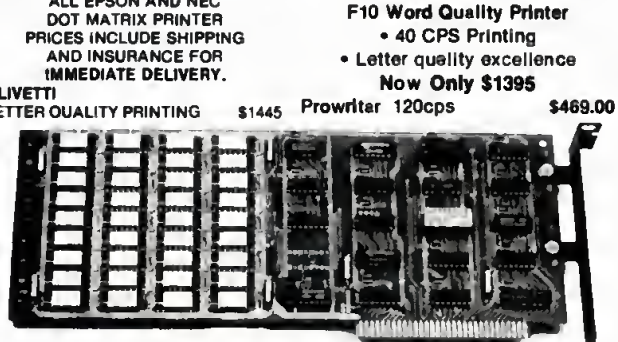

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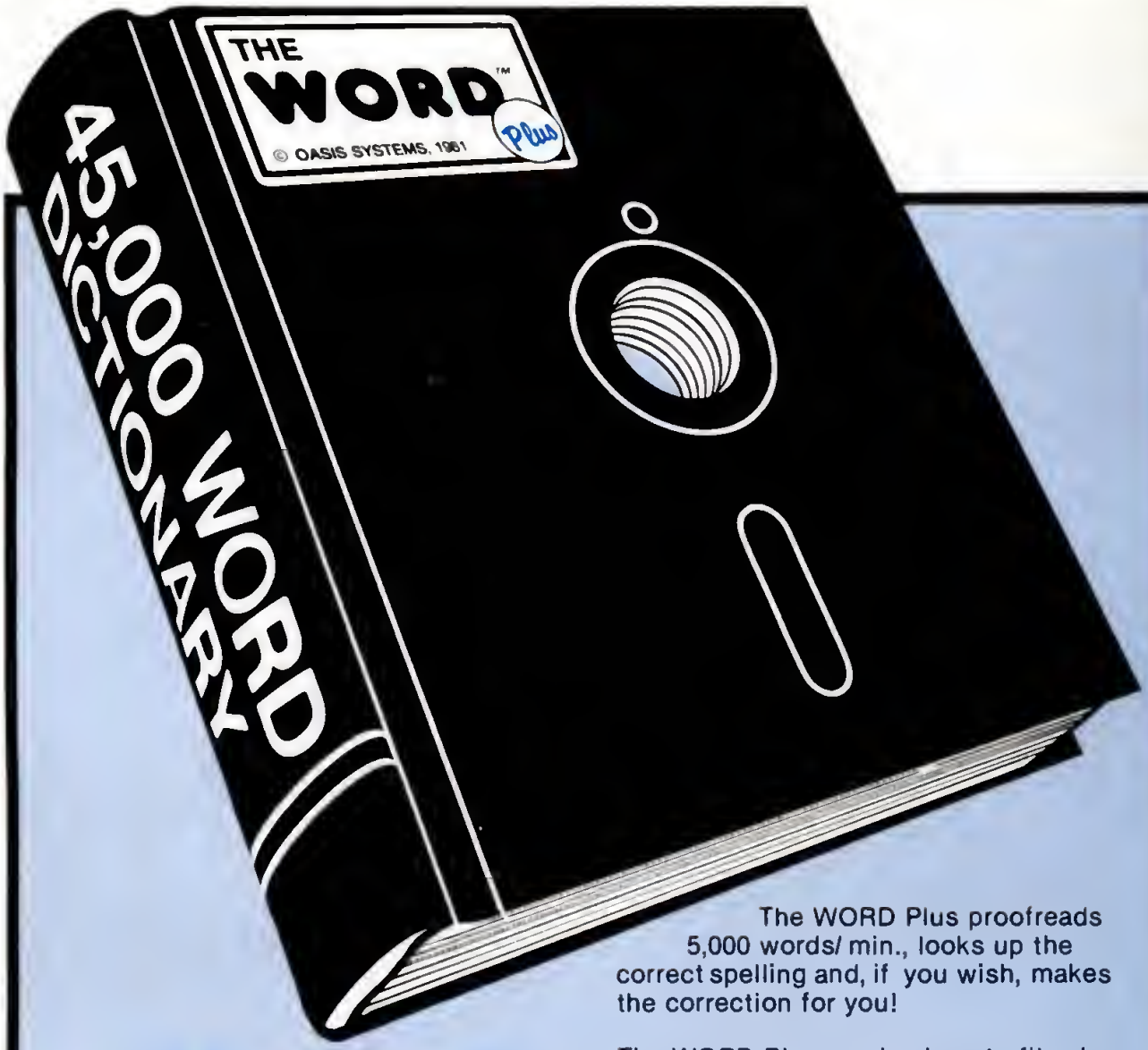

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PC On A Budget

Generic components and careful shopping will enhance your PC options without draining your bank account. You can splurge on extra memory and a dot matrix printer, and still be a smart buyer.

Price is a major factor in the minds o many computer shoppers, especially fo the small-business or home user. As a re sult, many buyers have shunned the IBM looking instead at what they perceive to b a low-price alternative. Surprise: The PC can be a low-price alternative.

How much you pay for any compute system depends on how it is equipped and where you buy it. As far as the IBM brand name is concerned, you have a limited choice as to where to shop. It is unlikely

ou will find a significant discount unless ou buy five machines or more. But many arts of your system don't necessarily have be emblazoned with those three magic nd sometimes expensive) initials.

An IBM PC is really a collection of omponents that can be purchased all at nce from an authorized IBM dealer or in ieces from a variety of dealers. The enterpiece is the system unit, which, in its inimal configuration, comes with 16K of emory, a keyboard, the Intel 8088 central processing unit (CPU), and other necessary hardware. This minimal system is available from IBM, ComputerLand dealers, Sears Business Centers, and a select group of authorized independent dealers.

The 16K system unit with a keyboard retails at IBM Product Centers for $1,265. You will sometimes see it for a higher price but rarely for less. This initial investment represents less than a third of the typical system cost for the hardware alone. The rest of your hardware money goes to

the display, the disk drives, additional memory, a printer, and other devices.

Expandable and Flexible

One of the nicest features of the PC is the ability to equip it according to your needs and budget. It is possible to buy the 16K system and a color/graphics adapter ($300), and use a cassette recorder for data storage and a TV set as a display. This $1,565 starter system will help you learn programming, but you will be hard pressed to find software. Very few users settle for such a limited system.

You can also spend in excess of $15,000 for your PC system. Start with a 64K system with monochrome display and two 320K floppy disk drives ($3,100), upgrade it to 256K of memory (about $900), add an IBM serial port ($150), a Hayes direct connect modem (about $300), a letter quality printer ($1,000 to $5,000), and you can spend $10,000 before you buy your software. Add a 20 megabyte hard disk, and your accountant has $15,000 worth of equipment to depreciate. This is only the beginning. Scanning the pages of this magazine will tempt you with thousands of dollars worth of additional toys, tools, and software to enhance your PC and drain your bank account.

Figure 1: *Comparative Costs*

Item	IBM	Apparat
16K system	$1,265.00	$1,265.00*
Additional 48K	270.00	75.00
Disk card	220.00	220.00*
Two 320K disk drives	1,300.00	630.00
Monochrome/printer card	335.00	335.00*
Monochrome display	345.00	345.00*
80 CPS dot matrix printer	555.00	499.00
Printer cable	55.00	30.00
TOTAL	$4,345.00	$3,399.00

*Purchased from IBM Product Center, not available through Apparat.

A Typical System

A happy medium does exist. I put together a typical system that could serve the needs of many users. It has 64K of memory, two (320K) dual-sided floppy disk drives, an IBM monochrome display, and an IBM (or Epson) dot matrix printer. You could save about $400 by using single-sided drives, but for most users the extra storage capacity of the dual-sided drives is

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well worth the cost.

At an IBM Product Center this system costs $4,345, but if you shop around, you can put together a virtually identical system for about $1,000 less. Part of the system depicted in the chart below was purchased at an IBM Product Center and the rest through Apparat, a mail-order company that advertises in *PC* and other magazines. Although I am not endorsing Apparat or any other vendor, I can say that the disk drives are identical to those sold under the IBM label (manufactured by Tandon), that the RAM chips are the generic equivalent to the RAM sold by IBM, and that the printer is the same Epson MX-80 that IBM sells under the name IBM 80 CPS Matrix Printer. Apparat's printer cable is electronically the same as IBM's though not as sturdy. Figure 1 offers some comparative costs.

I KNOW OF no way to get a monochrome display as crisp and readable as IBM's.

Shop Around

Apparat is one of many companies with products listed in this issue, and pricing is competitive. Tandon drives (identical to IBM's) are available from several other sources including Professional Data Systems, which sells the dual-sided drives (100-2) for $279 (IBM charges $650) and single-sided drives (100-1) for $208 (IBM charges $450). Maynard Electronics has a $195 disk controller that is purportedly identical to IBM's $220 unit. For $275 Arby Electronics will sell you a disk controller that also includes a parallel interface.

Memory Upgrade

Two levels of memory upgrade are available. If you buy a 16K system, you will undoubtedly want to upgrade to at least 64K. Once your system is up to 64K, you can add an additional 192K or more by plugging a memory board into one of the five expansion slots.

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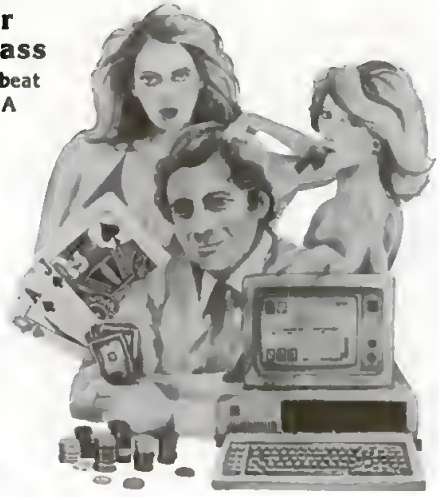

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64K for $270, but you can purchase your RAM chips from an electronics store or mail-order house for as little as $2 per chip (you need 27). Several companies manufacture memory chips compatible with the IBM. The RAM chips that came with my PC were marked Texas Instruments 4116. Any equivalent chips will do; just be sure they are 4116s operating at no more than 200 nanoseconds. Certain companies that advertise in PC sell the entire set of 27 chips needed to upgrade from 16K to 64K.

Monochrome Display

I know of no way to get a monochrome display as crisp and readable as IBM's, especially if you plan to do a lot of word processing. IBM's monochrome is a special display and requires the IBM monochrome card. Jack Strick and Associates, however, offers a 12-inch NEC green monitor and a cable for $249 ($95 less than IBM's) that plugs into IBM's monochrome card. Even without this special cable, you can plug a standard video monitor into an IBM as long as you use the PC color/graphics card. The display from this card won't be as crisp as the monochrome, but it's quite good. Black (or green) and white monitors sell for as little as $90.

IF YOU WANT to display more than 40 columns per line, a monitor is almost mandatory.

Color Display

IBM doesn't make a color display, so you're totally on your own in that department. Your cheapest option is to connect the PC to your color TV. The resolution, however, will not be as good as with a true monitor. If you want to display more than 40 columns per line, a monitor is almost mandatory. Color monitors start at about $300, but some of them are not capable of displaying the full 80 columns and 16 colors the PC can generate. Any color monitor requires the IBM color/graphics card.

Plug-In Cards

As you may have already noticed, this issue of PC covers a wide variety of plug-in cards to enhance the performance of your PC. Because of the PC's ability to address up to 1 megabyte of memory, a number of companies, including IBM, have manufactured boards with additional RAM. Memory boards can have as little as 16K or as much as 1024K of additional RAM. When the PC was first announced, IBM was charging $540 for a 64K memory board. IBM has recently lowered the price to $350, which makes its board competitive with others, but it doesn't offer multifunction memory boards.

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card, the fewer slots you use up. AST Research offers an expandable 64K Combo+ card. Not only can it be upgraded to 256K, but it can serve as a serial port (for a modem or printer), a clock/calendar, and a parallel port (for a printer) as well. The board with 64K of memory sells à la carte for $435. Each option is $60, or you can order the board with all three options for $595. Additional memory is $145 for each 64K. Seattle Computer sells a RAM+ board with a built-in serial interface. Prices start at $475 for 64K and $150 for each additional 64K.

Assembly

Assembling your own system is easier than you might suspect. But if you're at all squeamish about mucking about in the bowels of your expensive new unit, you might be better off buying the assembled system from a dealer or seeking help from a service technician or a consultant. Check with your dealer's service department to see if they will assemble your system. You will have to pay for the service, but the bill might be less in the end. You can also look for consultants to help you assemble your system; some are listed in this issue.

Most plug-in cards slip right into a cage at the back of your system unit. Installing disk drives is a little trickier, but not difficult. Although installing RAM chips isn't difficult, you have to be careful. Be certain that the notches on the ones you install are lined up with the nine chips already soldered to the board. Try not to bend any pins. If you do bend them, you can usually straighten them out, but they may break. Any incorrectly installed chips are likely to be destroyed as soon as the power is turned on. Seek help if you're not sure what you're doing.

Service

What if something breaks? If you buy from a local dealer, the store will usually handle any warranty repairs or replacements if the problem occurs within the warranty period (usually 90 days). If a mail-order component breaks, you must remove the component and send it back to the mail-order house or manufacturer. You could also take your computer to a local service center, which is probably a lot easier than sending the part through the mail. They will of course charge for their work unless they can be reimbursed by the manufacturer.

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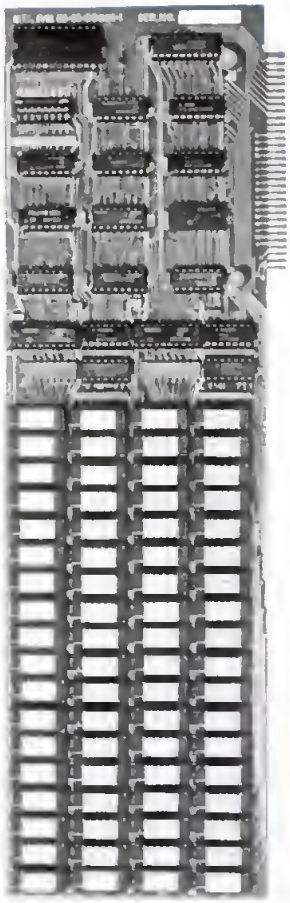

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Toll free 1-800-348-3377 (Indiana 219-664-5741)

Before you order equipment, inquire about whether your local store or repair center will work on equipment you purchase elsewhere. I randomly called four ComputerLand dealers regarding store policy. Three said they would work on a system purchased elsewhere if their technicians were familiar with the component. One admitted his overworked service department discriminates against systems purchased elsewhere.

Research, Risks, and Time

Putting together your own system is going to involve research, risks, and time. First you have to scrounge up the various components. *PC* is the best research tool: This special issue lists more than a thousand products to enhance your PC. But are they going to be available when you need them? If you do plan to order your system in components, call the vendors before placing orders, to find out when they can ship and to coordinate the orderly arrival of your components. Some manufacturers advertise parts prior to availability for shipping.

See Your Local Dealer First

Don't overlook your local dealer as a source of bargains. Many of the components mentioned here and elsewhere in this issue can be purchased from (or ordered through) ComputerLand or other dealers. Some stores that don't carry the IBM PC do carry compatible software and hardware. You will find a great number of advantages to buying locally even if your system doesn't require servicing. If you see something you want, ask your local dealer before sending a check or calling an 800 number. Even if a local dealer's price is higher, the service and peace of mind might be worth the difference.

PUTTING together your own system is going to involve research, risks, and time.

IBM Knows What It's Doing

IBM makes a great computer and made the surprising decision to create an open system, allowing third-party hardware and software vendors the freedom to creatively enhance the IBM PC system. What IBM may lose in add-on equipment sales, it will more than recover in increased computer sales and customer goodwill.

IBM is not immune to the effects of competition. It has lowered many component prices since initially introducing its system. When this article was first drafted, the price differences between IBM and the other companies were greater than they are now, and I suspect IBM's price drop will cause others to lower prices even further. In the meantime, it's a buyer's market with plenty of options. */PC*

8" DISKETTE FOR IBM PC

The 8" diskette is a universal standard for saving and interchanging data and programs between computer systems. We have developed a modification to the IBM diskette controller card and over ten utility programs that enable the user to interface his IBM PC to other computer systems including all IBM models such as the 3741, S/1, S/23, S/34, S/38, Displaywriter, TRS80 Model II, DEC, NCR, Honeywell, Univac and CP/M systems. One or two sided, single (FM) or double (MFM) density recording with 128, 256, 512, or 1024 bytes/sector is supported. The utility programs can copy files between the PC and hundreds of different systems using IBM data interchange, a CP/M file directory, or by specifying the starting and ending file sector numbers. Automatic ASCII-EBCDIC conversion is provided. The system can also be used as a 1.2 Mbyte drive to backup a hard disk or as a regular DOS drive for files.

The complete system price including enclosure, drive, cable, and all utility programs is $1295. An optional 240VAC 50HZ or 115/240VAC DC version is available for an additional $70. For users that want to use their own drives, the programs and documentation are available for $695. Payment is by check or COD with delivery within 10 days. Size is 9" x 5" x 19" —weight is 25 lbs.

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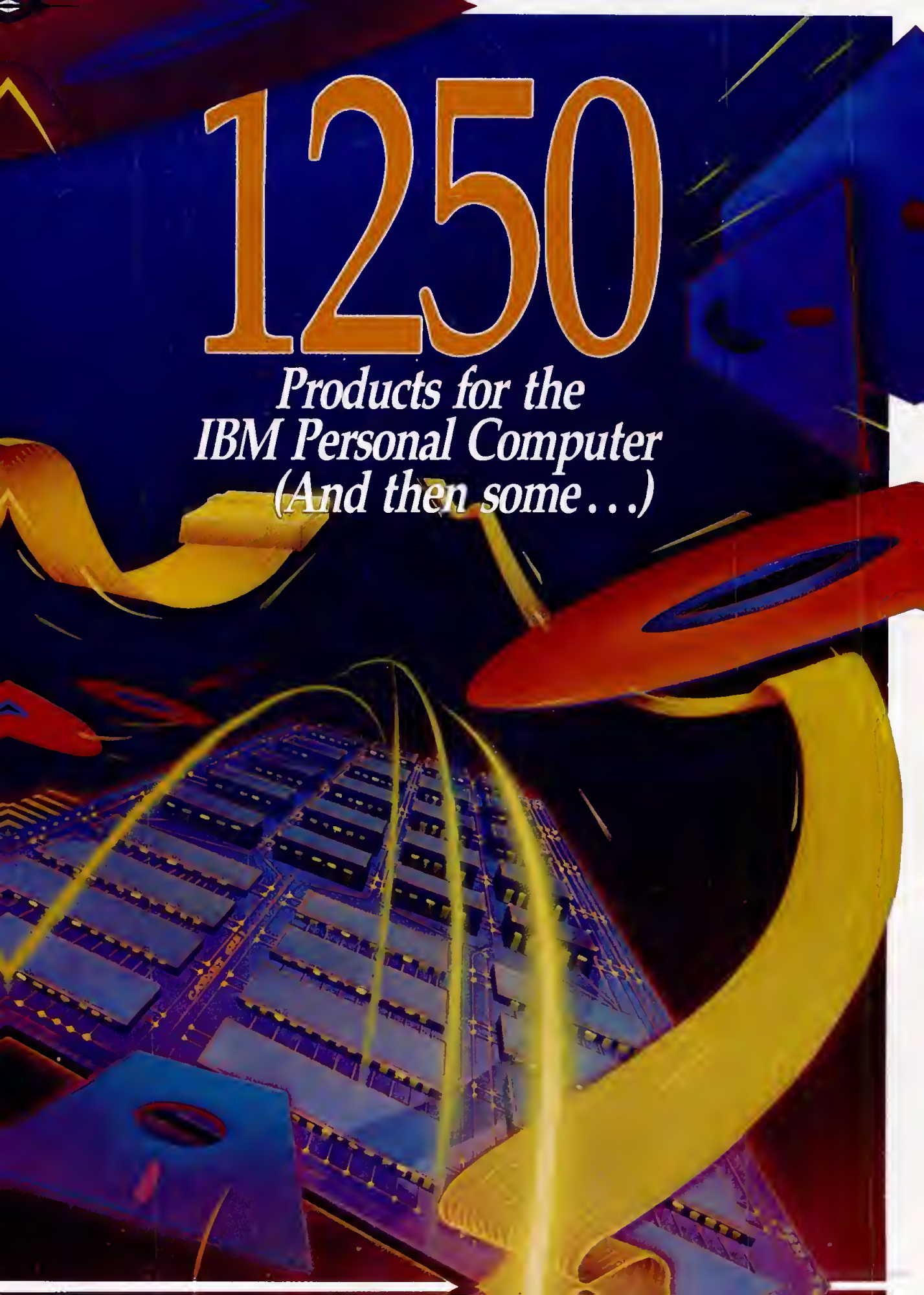
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PC Product Guide

In creating the PC Product Guide we received more press releases than we ever expected. If you've wondered about PC software, the kinds of monitors available, or if you've tried to find PC bumper stickers, you'll want to read ahead.

We've spent the last 3 months finding out what is available in PC products. After gathering and sifting through the deluge of information, we divided the listings into five categories: Hardware; System Software; Applications Software; Educational, Personal, and Leisure Software; and Support.

The Hardware category includes products such as disk drives, monitors, and printers. System Software features operating systems, languages, and utilities. Applications Software includes programs for accounting, word processing, and data management. In Educational, Personal, and Entertainment Software we have listed games, educational programs, and software for personal and home use. Support guides the reader to accessories, publications, services, user groups, and dealers.

Each of the five sections has an introduction followed by product listings. The introduction describes features and applications for the products in that category, and, for readers new to computers, we've defined relevant terms such as system software, electronic bulletin boards, and printer buffers.

Each listing includes the product name and a description of the product based on information from the manufacturer. Following are list price and requirements, and the manufacturer's name, address, and telephone number (note that in some cases this information was unavailable).

Do you wonder whether you can purchase a letter quality printer for the PC or find a book to learn programming? Well you can. You'll find what you need in the PC Product Guide. We're impressed by both the range and quantity of products and support for the PC. We think you'll be impressed too.

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PC Product Guide listings were prepared from press releases submitted by manufacturers and distributors. We were unable to test the products listed, and we regret any incorrect information or omissions.

Hardware

The Hardware section of the PC Product Guide consists of six groups of products: Boards, Storage Devices, Monitors, Printers, Modems, and Miscellaneous Hardware. Many kinds of Boards are described. (Note that the terms card, adapter, and interface are also used to refer to boards.) Memory expansion boards increase the amount of memory in your computer. Clock and calendar boards are used for applications requiring dependable time and date information. Color/graphics boards allow you to attach a monitor to your PC to display color and graphics, and input/output (I/O) boards enable you to transfer information from the PC to other devices, such as a printer or a modem. Combination boards combine features such as adding memory, a clock, or I/O facilities.

When you add a board, make sure you have an unused expansion slot inside the computer. If all the slots are filled, you can get an expansion chassis, which provides slots for additional boards. Also remember that to add a memory board, the PC must already have 64K of memory.

Storage devices are components such as floppy disk drives, Winchester hard disk drives, cartridge disk drives, and magnetic tape systems. The personal computer also comes with a cassette tape interface, a low-cost method of storage; however, many people prefer disk storage because it offers greater speed and direct access to large amounts of data.

Floppy disks are magnetic storage disks that generally come in two sizes, 5¼ inches or 8 inches in diameter. Floppy disks are inserted into disk drives that are either single- or double-sided. Single-sided drives record on one side of a disk, and double-sided drives record on both sides, giving more storage space. Many disk drives fit into the computer itself, but some are external. Cartridge disks, like floppy disks, can be inserted into the disk drive and removed, but they have more storage capacity than floppy disks. Winchester disks are permanently mounted within the disk drive. These systems also have greater speed and storage capacity than floppy disks.

Some of the hardware described in the storage group are hard disks with circuits that sense power failures and safely complete functions before shutting down. Shared hard disk systems enable several personal computers to use a single hard disk. You can buy kits and assemble the components of a hard disk drive yourself. Magnetic tape systems are available for backing up data stored on hard disks.

When choosing a storage system, consider cost, the amount of data you have to store, and how much speed you need to provide access to data. As we said earlier, cassette tape provides low-cost storage. Floppy disks provide quick, direct access to data, and hard disks enable you to store large amounts of data. Remember that when you choose a disk drive system, you will need a disk operating system, such as PC-DOS or CP/M-86, and a disk interface board, usually provided by the drive vendor or another source. If you choose a hard disk system, you will need at least one floppy disk drive.

The monitor is the part of the computer that looks like a television screen. Monitors are used to display characters and graphics. With the personal computer you have a choice of one-color (monochrome) monitors or monitors that display up to 16 colors. You can also attach a television set to your PC and use it as a monitor. A board is needed to connect a monitor to the PC. The monochrome adapter is used for the IBM monochrome monitors, and a color/graphics adapter is needed to attach a color monitor or a television set.

The products in the PC Product Guide offer a choice of one-color monitors in green, amber, or black and white. Black and white monitors are usually the least expensive, but many people find that amber and green reduce eye strain. Color monitors enable you to display up to 16 colors and color graphics for charts, graphs, and games. Some monitors display 40 columns across the screen, while others display 80 columns. A television set used as a monitor will display only 40 columns.

Before you choose a monitor, see a demonstration. Make sure the kind of graphics you need can be produced, that the characters are clear, and that the color is easy on the eyes, particularly if you use the PC for word processing.

Interchangeable Terms

THE FOLLOWING TERMS ARE USED INTERCHANGEABLY: serial interface, serial port, asynchronous communications adapter, async card, RS-232 interface, RS-232-C interface, EIA RS-232-C interface.

Also used interchangeably are parallel interface, parallel port, Centronics interface, Centronics-compatible interface, Centronics parallel interface. These terms often appear followed by "card," "board," or "adapter." Check with manufacturers and dealers before making a purchase to assure that hardware is compatible with your IBM PC.

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One of the most useful computer peripherals you can buy is a printer. A printer produces reports of deta, documents prepared by word processing, and program listings. Several kinds of products are described in the Printer group.

Typewriter interfaces are devices that convert an electric typewriter into a printer compatible with the personal computer. Connectlng a typewritar lnterface to the PC is an inexpensive way to produce small amounts of letter quality printing.

Two kinds of printers ere featured: dot metrix printers and iatter quality printers. Dot matrix printers form each character using a pattern of small dots. Some printers have such fine resolution (the dots are so close together) that the letters appear to have been made with fully formed characters. Letter quallty printers, usually daisy wheel printers, produce solid characters of suitable quality for letters and menuscripts. The advantages of letter quality printers ere their interchangeable typefaces and high-quality characters. Dot matrix printers, on tha othar hand, provide high-speed printing and more flexible characters, such as double size, italics, and graphics.

The final group, Miscellaneous Hardware, is devoted to different kinds of computer hardware that carry out many interesting functlons. One product is a speech synthesizer that produces voice sounds from text typed into the computer. Other products are game paddles and joysticks, whlch provide input for games and other applications. Light pens allow you to enter responses to the computer without using the keyboard. By pressing the pen to the monltor screen, you can make menu selections or draw graphics. Calendar and clock systems designed for applications that need accurate time and date records are also included. Some of these peripherals even operate burglar elarms end control sprinkler systems. Other products ellow several PCs to share a single printer, plotter, or modem. And finally, battery powered backup systems keep your computer from shutting down and destroying data during power interruptions.

When choosing hardware, meke sure you have compatible components so the entire system will work properly. To avoid problems check with the hardware manufecturer or computer dealer before making a purchase.

Features of the printers include sub- and superscripting, underlining and boldfacing, doubla wida and italic characters, choice of pitch and character style, justification and centering, line space selection, and special character sets for foraign language alphabets. The printers also have different paper handling capabilities. Some are designed for single sheets of paper, some accept roll paper, and othars have tractor feed devices, which feed paper continuously through the printer during printing.

Plotters are anothar product described in the printer group. Plottars, some of which produce colored output, use pens to draw graphs, charts, and other drawings such as maps.

Other printer-related products are printer buffers. The printer buffer accepts high-speed data from the computer and stores the data in its own memory. Then the buffer sends the data to the printer, so editing or other tasks can take place while the printer prints.

To connect a printer to the PC, you need either a serial or parallel interface (also called an adapter or a board). The IBM and Epson dot matrix printers require a parallel interface. Serial intarfaces are raferred to by several other names such as RS-232 or asynchronous communications adapter. Parallel interfaces are also referred to by product names such as Centronics interfeces or Centronics parallel interfeces. There is a parallel interface on the IBM monochrome edapter, so if you heve that board, you don't need to buy a separate parallel interface. Also, you need a cable designed to connect the printer to the intarface. To avoid problems in connecting your printer, contact the printer manufacturar or computer dealer to make sure the PC and the printer you choose are compatible.

The next group ln the Hardware sectlon is Modems (which stands for modulator-demodulator). Modems convert audio signels into digital information that can be understood by the computer. Modems are used to communicate with other computers over telephone lines and ellow you to transfer deta files, use othar computars and programs, or send and receive electronic mail.

Most of the modems in the *PC* Product Guide are direct connect modems, meaning they plug directly into your telephone line. Other kinds of modems are acoustic couplers, which are usually less expensive than direct connect modems. Some modems hava speakers end some feature automatic telephone dialing and answering. When choosing a modem, look for the features you need, such es eutomatic dialing and answering, and maka sure you have the proper interface board.

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	NAME	DESCRIPTION
1	RULE78	Interest Apportionment by Rule of the 78's
2	ANNU1	Annuity computation program
3	DATE	Time between dates
4	DAYYEAR	Day of year a particular date falls on
5	LEASEINT	Interest rate on lease
6	BREAKEVN	Breakeven analysis
7	DEPRSL	Straightline depreciation
8	DEPRSY	Sum of the digits depreciation
9	DEPRDB	Declining balance depreciation
10	DEPRDDB	Double declining balance depreciation
11	TAXDEP	Cash flow vs depreciation tables
12	CHECK2	Prints NEBS checks along with daily register
13	CHECKBK1	Checkbook maintenance program
14	MORTGAGE/A	Mortgage amortization table
15	MULTMON	Computes time needed for money to double, triple, etc
16	SALVAGE	Determines salvage value of an investment
17	RRVARIN	Rate of return on investment with variable inflows
18	RRCONST	Rate of return on investment with constant inflows
19	EFFECT	Effective interest rate of a loan
20	FVAL	Future value of an investment (compound interest)
21	PVAL	Present value of a future amount
22	LOANPAY	Amount of payment on a loan
23	REGWITH	Equal withdrawals from investment to leave 0 over
24	SIMPDISK	Simple discount analysis
25	DATEVAL	Equivalent & nonequivalent dated values for oblig
26	ANNUDEF	Present value of deferred annuities
27	MARKUP	% Markup analysis for items
28	SINKFUND	Sinking fund amortization program
29	BONDVAL	Value of a bond
30	DEPLETE	Depletion analysis
31	BLACKSH	Black Scholes options analysis
32	STOCVAL1	Expected return on stock via discounts dividends
33	WARVAL	Value of a warrant
34	BONDVAL2	Value of a bond
35	EPSEST	Estimate of future earnings per share for company
36	BETAALPH	Computes alpha and beta variables for stock
37	SHARPE1	Portfolio selection model-i.e what stocks to hold
38	OPTWRITE	Option writing computations
39	RTVAL	Value of a right
40	EXPVAL	Expected value analysis
41	BAYES	Bayesian decisions
42	VALPRINF	Value of perfect information
43	VALADINF	Value of additional information
44	UTILITY	Derives utility function
45	SIMPLEX	Linear programming solution by simplex method
46	TRANS	Transportation method for linear programming
47	EOQ	Economic order quantity inventory model
48	QUEUE1	Single server queueing (waiting line) model
49	CVP	Cost-volume-profit analysis
50	CONDPROF	Conditional profit tables
51	OPTLOSS	Opportunity loss tables
52	FQUOQ	Fixed quantity economic order quantity model
53	FQEOWSH	As above but with shortages permitted
54	FQEOQPB	As above but with quantity price breaks
55	QUEUECB	Cost benefit waiting line analysis
56	NCFANAL	Net cash flow analysis for simple investment
57	PROFIND	Profitability index of a project
58	CAPI	Cap Asset Pr Model analysis of project
59	WACC	Weighted average cost of capital
60	COMPBAL	True rate on loan with compensating bal required
61	DISCBAL	True rate on discounted loan
62	MERGANAL	Merger analysis computations
63	FINRAT	Financial ratios for a firm
64	NPV	Net present value of project
65	PRINDLAS	Laspeyres price index
66	PRINDPA	Paasche price index
67	SEASIND	Constructs seasonal quantity indices for company
68	TIMETR	Time series analysis linear trend
69	TIMEMOV	Time series analysis moving average trend
70	FUPRINF	Future price estimation with inflation
71	MAILPAC	Mailing list system
72	LETWRT	Letter writing system-links with MAILPAC
73	SORT3	Sorts list of names
74	LABEL1	Shipping label maker
75	LABEL2	Name label maker
76	BUSBUD	DOME business bookkeeping system
77	TIMECLCK	Computes weeks total hours from timeclock info.
78	ACCTPAY	In memory accounts payable system-storage permitted
79	INVOICE	Generate invoice on screen and print on printer
80	INVENT2	In memory inventory control system
81	TELDIR	Computerized telephone directory
82	TIMUSAN	Time use analysis
83	ASSIGN	Use of assignment algorithm for optimal job assign.
84	ACCTREC	In memory accounts receivable system-storage ok
85	TERMSPAY	Compares 3 methods of repayment of loans
86	PAYNET	Computes gross pay required for given net
87	SELLPR	Computes selling price for given after tax amount
88	ARBCOMP	Arbitrage computations
89	DEPRSF	Sinking fund depreciation
90	UPSZONE	Finds UPS zones from zip code
91	ENVELOPE	Types envelope including return address
92	AUTOEXP	Automobile expense analysis
93	INSFILE	Insurance policy file
94	PAYROLL2	In memory payroll system
95	DILANAL	Dilution analysis
96	LOANAFFD	Loan amount a borrower can afford
97	RENTPRCH	Purchase price for rental property
98	SALELEAS	Sale-leaseback analysis
99	RRCONVBD	Investor's rate of return on convertable bond
100	PORTVAL9	Stock market portfolio storage-valuation program

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2. PORTMAP™ **$49.95**
Analyze your existing investment portfolio, whether it contains stocks, bonds, moneymarket instruments, and/or other securities. PORTMAP's summary report analyzes cost basis, number of units, and expected income by account, type of security, month of payment, and taxability (Federal, State, or non-taxable). The gain/loss report analyzes market values, gain/loss, and holding period by individual lot and type of security; margin account status is also reported. For ease at tax-time, a special report containing all required data for Schedule D is provided. Any number of portfolios may be processed, and data may be selected by portfolio or individual accounts. All data entry is interactive and user-oriented. PORTMAP is written in Microsoft BASIC and will be available in September 1982 for the IBM-PC and other computers running MS-DOS or CP/M.

3. INTERACTIVE RESUMÉ™ **$49.95**
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4. THE ADDRESSOR™ **$49.95**
A name and address filer system, alphabetized and adaptable to a 2" by 3" binder. It will also print address labels as well as remind you of important dates. Set to run on the IBM-PC under PC-DOS with at least one disk drive and Disk BASIC, ADDRESSOR includes a tutorial on setting up the filing system and a detailed manual.

5. PCWORD™ **$49.95**
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7. PCFORMS™ **$49.95**
A super text-formatting system which runs under IBM-DOS and Disk BASIC with at least 32 Kbytes of memory. Designed specifically for operating with the line printer, text may also be formatted for display on the screen. PCFORMS supports macros nested ten deep and printer specifications for overstrike, doublestrike, etc. PCFORMS accomplishes five main functions: Setting Text Characteristics, Text Formatting, Page Control, Printer Control, and Macros. When combined with PCWORD, PCFORMS provides all word processing capabilities of software selling for considerably more.

8. XREF™ **$39.95**
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Hardware

IBM Personal Computer

An easily expandable system that can be used in educational, business, professional, word processing, and entertainment applications. A minimum hardware configuration includes a high-speed, 16-bit microprocessor; 16K of user memory; an 83-key detached keyboard; a built-in speaker; color/graphics capability; diagnostics that automatically check the system components including power-on, self-test, and parity checking; and 40K of ROM, which includes a BASIC interpreter.

A starter system consisting of a keyboard and system unit that can be connected to a black and white or color TV set using an RF modulator (purchased separately). The system includes the BASIC Interpreter by Microsoft, which comes in three versions: cassette, diskette, and advanced. The cassette version is included in every system's ROM. It provides I/O instructions needed to enter and retrieve data, and supports use of the keyboard, display, light pen, and printer.

The diskette and advanced levels are optional (included with DOS). The diskette extension supports the use of diskettes, while adding date, time of day, and communications capabilities. The advanced extension enhances graphics to include features such as paint, circle, and get/put display, while increasing light pen and joystick support. *(List Price: 16K system unit with keyboard $1,265; 48K system unit with keyboord, disk drive, ond disk drive odopter $2,235)*

IBM Corporotion
System Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alasko, Howoii

BOARDS

Model U100A RAM Board

1 A board that affords 256K capacity using 64K RAM. Any 64K block is addressable at any 64K address boundary, and mapping PROM allows for full RAM space compatibility with the PC. Features also include parity error interrupt and fully buffered noise tolerant design. *(List Price: 64K with parity $398, eoch odditional 64K with parity $90)*

Universol Micro Inc.
6302 Odono Rd.
Mudison, WI 53719
(608) 274-6100

Memory Expansion Modules

2 A family of memory expansion modules in sizes from 64K to 256K designed to allow full memory utilization. Features include socketed high-speed dynamic RAMs for expansion and replacement of faulty components, single-board design for a capacity of 256K in any single PC slot, low component count for low power usage, parity checking and error reporting, switch-selectable addressing for memory positioning on any 64K boundary, ability to run IBM diagnostics, compatibility with all IBM hardware and software. *(List Price: 64K $395, 128K $620, 192K $845, 256K $1,075, 64K expansion kit $225)*

Personol Systems Technology, Inc.
22957 La Codenu
Laguna Hills, CA 92653
(714) 859-8871

Universal Wiring Boards

3 Three drilled universal wiring boards for breadboarding, prototyping, and low-volume production. Boards are form- and plug-compatible with IBM cards and can be installed in any of the five expansion slots on the PC.

Model 4613 has three-hole solder pads between power and ground buses for solder-wire interconnections. Model 4613-2 for wrapped wiring has a full ground plane, power plane, and three alternate power buses. Model 4613-1 has power and ground buses around its perimeter. All three boards hold diffarent width and number DIPs and come with layout planning sheets, instructions, card guide, and universal I/O connection mounting bracket. *(List Price: Model 4613-1 $37, Models 4613 ond 4613-2 $59 eoch)*

Vector Electronic Company, Inc.
12450 Gludstone Ave.
Sylmor, CA 91342
(213) 365-9661

Maxi-RAM Memory Board

4 A memory board that offers up to 512K parity-checked RAM and is completely socketed for ease of expansion and maintenance. One-year warranty. *(List Price: $1,295)*

Memory Technologies, Inc.
25 Moin St., Box 6
Twelve Mile, IN 46988
(219) 664-5741

UltraRAM

5 A memory board designed to industrial standards with low-inductance decoupling capacitors and solid tantalum storage capacitors. Muitilayer, ground-pianed printed circuit boards with gold-plated edge connector traces, solder masks for both sides of the PCB, and face grip sockets are also provided.

On-board switches for starting address in conjunction with RAM row disable switches allow the board to be placed in any unoccupied 64K segment within the PC's address spaca, with no special devices, circuits, or modifications required. A parity disable switch provides a "don't care" feature if parity is not desired or required by the user. The IBM diagnostics can test the memory board (both the power-up and IBM advanced diagnostics test).

Boards are available in 64K increments from 128K through 512K with socketed memory chip array so users can add memory upgrade kits as required. Instruction/operational manual is included, sized to fit the IBM user manual. *(List Price: $1,800)*

Daystor Systems Incorporoted
10511 Church Rd., Ste. A
Dullus, TX 75238-9990
(214) 341-8136

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Hardware

BOARDS

Combo Memory Expansion Board

6 A single board that includes 192K of expansion memory and a serial interface port. The board is expandable to 258K, and additional options are a parallel printer port and a real-time clock with battery backup. *(List Price: $499, additional 64K $100, parallel port $50, real-time clock $50)*

Qubie' Distributing
1707 Stewart St.
Santa Monica, CA 90404
(800) 421-7103, (213) 870-3718

Clock/Memory

7 An additional 64K or 128K of parity checking memory plus a battery-supported clock/calendar for applications requiring dependable date/time entries on records and files. It uses a 10-year Lithiode battery. *(List Price: 64K and clock/calendar $445, 128K and clock/calendar $540, 64K memory upgrade—nine 64K ICs—$90)*

Tenley Design, Inc.
P.O. Box 39155
Washington, D.C. 20016

Memory Boards

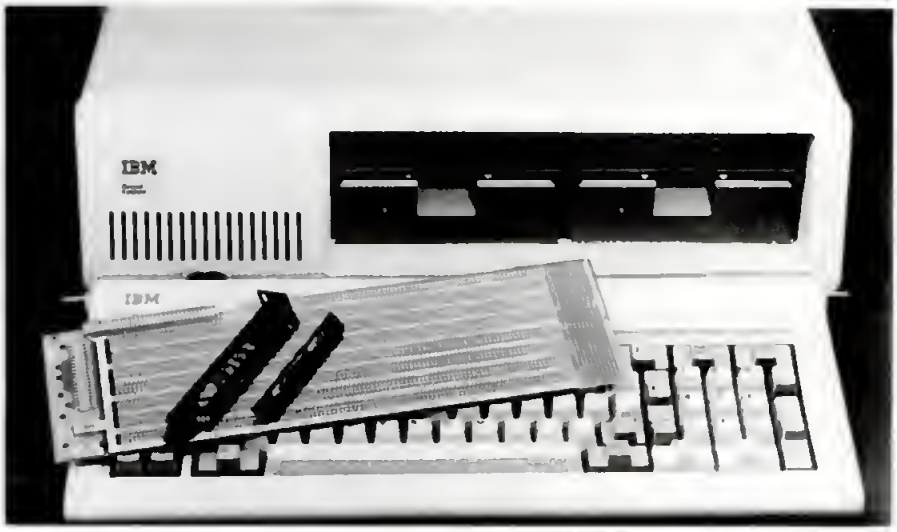
8 Four add-in memory boards with parity available for installation in any slot. PC disk drives and AC line transient protection are available at additional cost. The boards come in 64K, 128K, 192K, and 256K configurations. *(List Price: 64K $419, 128K $547, 192K $675, 256K $799, disk drives $239, AC line transient protection $29.95)*

Bitstream Inc.
P.O. Box 809
Boxahatchee, FL 33470
(305) 798-0025

Memory Boards

9 Two RAM boards of 258K and 512K. User manual and diagnostics are available from the manufacturer. Two double-density disk drives are also available in 640K and 1280K disk systems with controllers. Both disk systems consist of two drives each. *(List Price: RAM boards 256K $695, 512K $1,195; disk drives 640K $995, 1280K $1,395)*

Computer Technology Innovations
965 W. Maude Ave.
Sunnyvale, CA 94086
(408) 245-4256
TWX: 172-509 (domestic), 470-582 (international)



***Universal Wiring Boards*, Vector Electronic Company, Inc.**

Floppy Drive Controller with Parallel Port

10 A floppy disk drive controller and a parallel printer port in one board. The floppy drive section of the board is functionally identical to the IBM floppy disk drive interface and can interface up to four single- or two dual-sided floppy drives. The parallel port is functionally equivalent to IBM's parallel printer interface and can be used to interface a parallel printer, such as the Epson MX-80 to the PC. *(List Price: $269)*

Maynard Electronics
P.O. Box 3322
Longwood, FL 32750
(305) 869-8058

Floppy Drive controller with Serial Port

11 A floppy disk drive controller and a serial printer port in one board. The floppy drive controller is functionally identical to IBM's floppy disk drive interface and can interface up to four single- or dual-sided drives. The serial port is functionally equivalent to the IBM asynchronous interface. This port can be used to connect to a modem or other RS-232-type device, and runs with existing communications software. Installation is simple and well documented. The product includes a cable to interface to the internally mounted drives. *(List Price: $269)*

Maynard Electronics
P.O. Box 3322
Longwood, FL 32750
(305) 869-8058

SDI Floppy and Clock

12 A disk drive adapter with a clock, calendar, and backup battery that supports up to four drives. *(List Price: Not Available)*

Sigma Designs, Inc.
P.O. Box 3765
Santa Clara, CA 95055
(408) 496-0536

Memory Combo Cards

13 A family of memory combo cards that can be configured up to 256K. The MC series features storage capacities up to 256K, parity memory, one asynchronous communications port, and a parallel printer port. The basic board comes fully socketed and is user-upgradeable.

The Memory Combo Card includes an asynchronous parallel printer port, and wire-wrap and extender cards. The Combo+ Card includes a real-time clock. Disk++ includes a hard disk host adapter that allows the user to switch-select to either the Corvus or Tall Grass disk drives. Omni++ features a real-time clock and Omninet interface. Developed by Corvus Systems, this local area network device permits communication and information-sharing between computers. One-year warranty. *(List Price: Memory Combo Card $435–$1,155, Combo Plus $435–$1,195, Disk++ $635–$1,355, WW-070 wire wrap card and extender kit $95)*

AST Research, Inc.
2691 Richter Ave. #104
Irvine, CA 92714
(714) 540-1333

Hardware

BOARDS

MEM Memory Expansion Modules: 16, 64, 128, 192, 256

14 Memory expansion that includes 16K expansion chips to take the computar to 64K and an I/O board that can contain from 64K to 256K. The MEM16 is a kit of chips that plug into sockets on the main board inside the computer.

The boards add memory to the PC by plugging into the I/O connector slots insida the computer. They add 16K, 64K, 128K, 192K, and 256K bytes of storage respectively. Expansion kits are also available for the memory boards. *(List Price: MEM16 $25, MEM64 $295, MEM256 $555)*

Moynord Electronics
P.O. Box 3322
Longwood, FL 32750
(305) 869-6056

SDI Proto and MiniProto

15 A line of prototyping boards that includes the SDI Proto, a full-sized prototyping board with plated holes and power planes; and the SDI MiniProto, a half-size board similar to the Proto modal. *(List Price: SDI MiniProto, $30; SDI Proto, $55)*
Requires: RS-232-C.

Sigmo Designs, Inc.
P.O. Box 3765
Sonto Cloro, CA 95055
(408) 496-0536

Pack-Ram, Pack-Combo, Pack-Ram+Combo

16 Three compatibla products. Pack-Ram is a memory board that comes in three configurations—64K, 128K, and 192K. It provides on-board sockats for upgrading purposes. Pack-Combo is a combination RS-232 serial port, parallel printer port, and battery backup real-time clock. It includes an on-board jumper for port address selection for both ports. Software is included for the real-time clock application. Pack-Ram+Combo is a combination of both packages and features up to 256 memory with RS-232 serial port, parallal printer port and real-time clock. One-year warranty on all items. *(List Price: Pock-Ram 64K $225, 128K $335, 192K $445; Pock-Combo with printer port $245, without printer port $175; Pock-Ram+Combo 64K $495, 128K $615, 192K $735, 256K $855)*

Personal Data Systems, Inc.
1110 Wrigley Way
Milpitas, CA 95035
(408) 262-7680

Imagik

17 A board that displays images with graphic overlays. Image pixels range over 64 intensity levals, which can be enhanced to 64 gray or five color graphic levels. For high-resolution still frame, it provides 483 vertical lines by 640 pixels horizontal; for animation it provides 241 lines by 320 pixels with loops up to five frames in langth. Features include individually addressable pixels, simultaneous image and graphics display, user-selected loop rates, and light pen and external synchronous options. *(List Price: $2,950, with light pen $3,450)*

IDETIK Corporation
Modison, WI 53715

Boards, Hard Disk

18 A256K memory board with parity. A 1-yaar warranty is available from tha manufacturer. A hard disk subsystam and a channel board, the 2SP with two seriel ports are also available. *(List Price: 256K board $598, hord disk subsystem $1,899, 2SP $199)*

Zobek
7343 J. Ronson Rd.
Son Diego, CA 92111
(714) 571-6971

Graphics Card

19 A board that replaces fBM's display and printer adapter board. It offers graphics resolution of 720 horizontal by 350 vertical with tha graphics control features of IBM's color card. It includes the printer function, is compatible with DOS software, and will be available with popular graphics plotting software. *(List Price: $599)*

Hercules Computer Technology
160 Beechnut Dr.
Hercules, CA 94547
(415) 799-9354

PC/RAM Rack, PC/RAM Stack, PC/SASI RAM

20 A line of memory end combinetion boards in various configurations. Model PC/RAM Rack is expandabla to 256K. PC/RAM Stack is a 4- by 10-inch circuit board with 512K of parity-protected memory. Tha PC/SASI RAM combo board includes up to 256K RAM with parity, e seriel RS-232-C port, and SASf intarfaca allowing connection to 5¼-lnch hard disk drives. *(List Price: PC/RAM Rack $495–$995, 256K PC/RAM Stack $1,195, 512K $1,795, PC/SASI RAM $1,150)*

Hammond Computer Products, Inc.
3800 Crossbend Pl.
Plono, TX 75023
(214) 596-0130

RAM Expansion Board

21 A board that offers 64K to 192K bytes of eddressabla memory with parity, bus bar capacitors, invisible refresh, and gold connectors. *(List Price: 64K $310, 128K $420, 192K $525)*

Control Systems
2855 Anthony Ln.
Minneopolis, MN 55418
(612) 789-2421

Memory Expansion Boards

22 RAM boards that are available with 64K, 128K, 192K, or 256K. Also available is a 64K byte internel memory expansion kit to expand the PC from 16K or 46K to 64K bytes. *(List Price: DM-64 $449, DM-128 $645, DM-192 $840, DM-256 $1,035, ADM-64 $195)*

Dotamoc Computer Systems
680 Almanor Ave.
Sunnyvole, CA 94086
(408) 735-0323

Spectrum Series

23 A multifunction board combining memory, serial communications, and parallel printer lntarface functions. Tha board has up to 256K of field expandable memory, two asynchronous communicatlons lines, and a parallel printer port that interfaces to a wide variety of industry-standard printers.

All three functions reside on a single full-length card in 24 different configurations. Memory consists of sockated, high-speed dynamic RAMs and is designed for expansion. The four available configurations are 64K, 126K, 192K, and 256K. Field expansion kits ere availeble in 64K increments.

The memory section features parity checking end error reporting, switch-selectable addressing, and compatibility with IBM hardware and software.

Spectrum offers programmable baud rates ranging from 50 to 19,200, in either single- or dual-channel configuration. The parallel printer port lets users choose from e variety of dot metrix, letter quelity, end high-speed impact printers. A field expansion kit is availabla for tha printar. *(List Price: From $435 depending on configuration)*
Requires: 64K.

Personol Systems Technology, Inc.
22957 La Codeno
Laguno Hills, CA 92653
(714) 859-8871

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3 Choose from Intelligent Printers for your IBM Personal Computer

The NEC Spinwriter is an excellent printer. But you need more— More interfacing choices, more RAM buffer, and more word processing features. So we installed a specially designed interface and renamed the printer SELLUM I. For the past 2 years it's been outselling all expectations.

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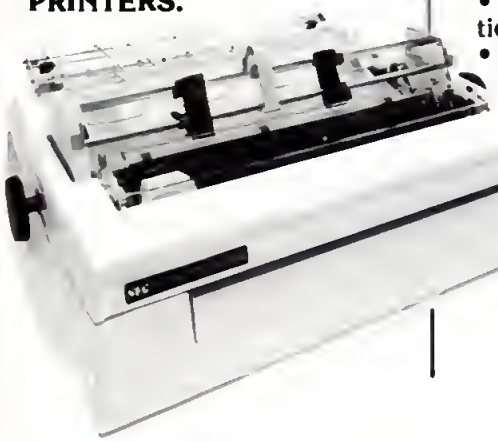

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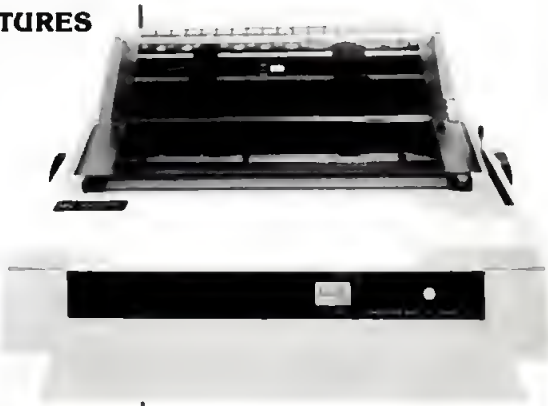
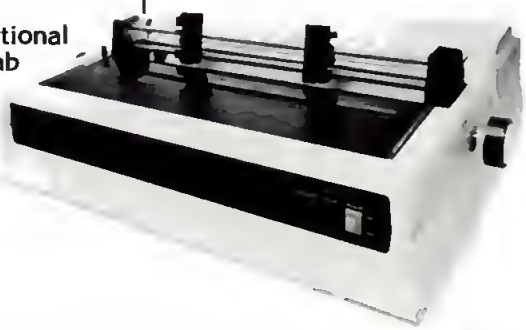


- Complete word processing features, standard.
- Supports optional front panel.



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Hardware

BOARDS

PC-MATE Device Master

24 An interfece to the BSR X10 remote controller with a real-time clock and calendar that interfaces to the BSR via en ultrasound edapter. It controls up to 16 devices in the home or office on a regular schedule or as part of an energy managament scheme. The reel-time clock end alarm are powered by en on-board battery. With additional circuitry end programming, the board can be used to turn the computer on, perform certain functions, reschedule, and turn itself off. One-year werranty. *(List Price: $229)*

Tecmar, Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

Prototyping Card

25 A card thet provides spece for up to 96 integrated circuits. It is full size and has power and ground buses for mounting a DB25 or DB37 connector. *(List Price: $49)*

Automoted Business Machines Incorporated
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

I-QUEUE

26 A plug-in printer spooler that eccepts over 4000 cps end sends the data to the printer et whatever speed it can accept it. I-QUEUE has 16K onboerd memory and autometic forms control. It also provides programmable word processing functions and e clock/calendar. Two-yeer guerantee. *(List Price: 16K I-QUEUE with clock/colendor $495, 64K memory expansion $175, interfoce cable for PC printer $50)*

Requires: Printer.

Periphex, Inc.
149 Polmer Rd.
Southbury, CT 06488
(800) 221-0732, (203) 264-7937

JRAM

27 A memory board that adds 512K memory to PC's maximum 64K configuration using one expansion slot. 1024K of memory can be added by using two expansion slots. One-yeer werranty. *(List Price: $1,200)*

Toll Tree Systems
1036 Los Altos Ave.
Los Altos, CA 94022
(415) 941-8747

Memory Expansion Modules

28 Three memory expansion modules. Model 4192 adds 192K RAM with perity end expands mein memory to 256K. Model 4256 edds 256K RAM, expanding memory to 544K, and offers switch-selectable address-spece location. Model 4512 offers two serial asynchronous ports and 512K with parity. *(List Price: Model 4192 $579, Model 4256 $729, Model 4512 not available)*

Requires: 64K.

Intermedio Systems
10601 S. Saratogo-Sunnyvole Rd.
Cupertino, CA 95014
(408) 996-0900

RAM+ Card

29 A memory card that allows the PC to run PASCAL, FORTRAN, and several VisiColc-type programs. Feetures include 36 installed memory sockets. Users can purchase additional memory, which can be plugged into the board, using 64K, 5-volt, 200-nanoseconds chips conteined in the company's expansion kit. The board is expandable to 256K. Each card has RS-232 seriel port supported by IBM PC software. *(List Price: Not available)*

Seottle Computer
1114 Industry Dr.
Seottle, WA 98188
(600) 426-8936, (206) 575-1830

Memory Expansion

30 Memory expansion that complements tha manufecturer's Omni-Board. It provides parity-protected memory for tha PC; 64K increments ellow for growth to 256K. *(List Price: MEM-64K $445, MEM-128K $625, MEM-192K $605, MEM-256K $985)*

Automated Business Mochines Incorporated
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

Serial/Parallel Interface with PROM Space

31 Two seriel ports, two parallel ports, and four PROM sockets on one board with 25 pin connectors on the reer panel and two ribbon connectors on the board. It uses LPT and COM calls. *(List Price: $300)*

Control Systems
2855 Anthony Ln.
Minneopolis, MN 55418
(612) 789-2421

DS1, DS2

32 Plug-in compatible expansion circuit boards end software packages that install the CP/M 2.2 operating system on the PC. Both contain 64K of parity RAM end a Z-80B microprocessor. Two diskettes include the CP/M operating system and utilities, and Byed's utilities. The I/O processing system is interrupt-driven, fully buffered, and uses DMA transfers to and from tha Z-80 host. The DS2 contains an IBM-compatible serial port capable of driving RS-422 lines. *(List Price: DS1 $660; DS2 $760; documentotion only, $40)*

Requires: 48K, one disk drive.

BYAD Inc.
5345 N. Kedzie Ave.
Chicago, IL 60625
(312) 539-4922

APSTEK AIM-256

33 An add-in memory expansion card that allows users to expand the eveilelble memory from e base-line system of 64K bytes to a totel of 320K bytes with e single card. The card is aveileble in five versions: 0K, 64K, 128K, 192K, and 256K. The 0K byte card is a fully essembled, burned-in, and tested boerd without RAM for users who can obtain their own RAMs.

Both the starting address boundary end the ending address boundary are DIP-switch selectable. No FPLAs or PROMs ere used. Other features include precision-delay line timing, parity generation end checking, 100 percent decoupling of the entire RAM array, and no speciel component requirements.

A memory card diagnostic disk is aveilable for users planning on expanding memory card capacity with their own RAMs. A bare board with brecket and schematic is also eveileble. *(List Price: 0K byte $189, 64K $269, 128K $419, 192K $549, 256K $679, bareboard $69, memory cord diognostic disk $19)*

Apstek, Inc.
P.O. Box 5306
Richardson, TX 75080
(817) 571-7171

Maxicard

34 A memory boerd that edds up to 576K in increments of 64K. It mey be installed in either the upper or lower segment of 1MB. The boerd is of four-leyer design and includes on-board parity bit and switch-selectable addressing. *(List Price: 256K $1,199, 320K $1,349, 384K $1,489, 448K $1,619, 512K $1,739, 576K $1,849)*

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Bottomline rate of returns

System Requirements
IBM PC*: 64K
Single Disk-5¼"
DOS Basic
Screen Monitor: 80 chr.
Parallel Printer

Technology Real Estate

By:

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The following reproductions are actual printouts computed and generated on the IBM PC using DOS BASIC 1.0 they do not however, represent, the full capabilities of the software package.*

```
 1) FOR:  INVESTMENT ANALYSIS # 1
 2) FOR:  JAMES REALTY COMPANY
 3) PROPERTY ADDRESS CODE:  53 UNITS SANTA CALIF.
 4) DATE: MARCH 03 1982

****PROPERTY DATA INPUT****

 5) PRICE OF PROPERTY      =  2,000,000
 6) DOWN PAYMENT           =    300,000
 7) AMOUNT OF $ 1st LOAN   =  1,000,000
 8) INTEREST RATE 1st LOAN=       10.00
 9) NO. YRS. 1st AMORTIZED= INTEREST ONLY
10) NO. PAYMENTS/YEAR?     =         12
11) AMOUNT OF THE 2nd LOAN=    300,000
12) INTEREST ON 2nd LOAN   =       9.92
13) NO. YRS. 2nd AMORTIZED=      30.00
14) NO. OF PAYMENTS/YEAR   =         12
15) INITIAL CLOSING COSTS  =     30,000
16) ANNUAL TAX PAYMENTS?   =     26,000
17) ANNUAL INSURANCE COST  =      6,000
18) OTHER OPERATING COSTS  =     40,000
19) % VACANCY FACTOR       =       5.00
20) MONTHLY INCOME         =     19,247
21) % ANNUAL RENT RAISE    =       9.00
22) YOUR IRS TAX BRACKET   =         48
23) DEPRECIABLE AMOUNT     =  1,600,000
24) DEPRECIATION METHOD    =        100
25) DEPRECIABLE YEARS      =         15
26)  % SALE COMMISSION     =       5.00
27)  % OTHER SALE COSTS    =          6
28)  PROJ. RESALE CAP (%)=        9.72
29)  % APPRECIATION/YEAR   =       0.00

30)*** PARTNERSHIP DATA ***
      ----------------

31) %1ST PRT. FEE OF PROFIT =         15
32) %GENERAL PARTNER TAKE   =      40.00
33) AMT G.P. CASH INVESTED  =    150,000
34) %LIMITED PARTNER TAKE   =      60.00
35) # OTHER TYPE FEES       =       2.00

36)**OTHER MORTGAGES DATA**
37) AMOUNT OF MORTGAGE      =    600,000
38) % INTEREST RATE         =       9.36
39) NO. OF YRS. AMORTIZED   =      22.00
40) NO. OF PAYMENTS/YEAR    =         12
```

(OUTPUTS)

```
**CURRENT PURCHASE DATA**

NO.PYMNT 1st LOAN  =     8333.33
NO.PYMNT 2ND LOAN  =     9468.05
OTHER MORTG. PYMNT.=     1747.29
MONTHLY OPER. EXPS.=     5906.67
MONTHLY COSTS      =    18433.42
CAPITALIRATION RATE=        7.45
NET MULTIPLIER     =       13.64
GROSS MULTIPLIER(9)=        8.66
NET OI/DEBT SERVICE=        0.99
OPER. EXP. RATIO 9 =       30.99
```

(OUTPUTS)

	YR/END 1	YR/END 2	YR/END 3	YR/END 4
INCOME DATA				
GROSS INCOME	330,666	231,731	974,408	236,106
-VACANCIES	11,330	18,386	15,720	14,935
-OPERATION COSTS	70,880	77,259	84,213	91,792
=NET OPER'G INCOME	148,336	161,805	176,479	192,359
-1st MORTG. PYMNT.	100,000	100,000	100,000	100,000
-2nd MORTG. PYMNT.	29,616	29,616	29,616	29,619
-OTH35 MORTG.PYMNT.	20,649	20,649	20,969	20,969
=ANNUAL CASH FLOW	-2,649	11,319	25,836	41,773
9 C.F. RETURN PER YEAR=	-0.39%	+2.14%	+4.89%	+7.88%
TAX DATA*				
NET OPERATING INCOME=	166,536	161,905	176,478	192,353
-INTEREST EXPENSE	136,882	146,186	143,736	145,283
+INTEREST DISALLOWED	0	0	0	0
-DEPRECIATION	106,367	IDB,IDB7	IDB,667	106,367
=TAXABLE INCOME	-106,712	-90,950	-75,360	-39,395
CASH TAX SAVINGS	41,883	36,331	30,380	25,636
YIELD ON TAX SAVINGS	+7.90%	+6.86%	+5.73%	+4.50%

THE FOLLOWING INDICATE RESULTS AFTER SALE.

SALE DATA*				
SALE PRICE=	2,434,370	9,675,361	2,916,273	3,178,736
-1st LOAN BALANCE	1,000,000	1,000,000	1,000,000	1,000,000
-2nd LOAN BALANCE	298,663	295,917	295,576	291,008
-OTHER SOFTG. BALANCES	197,844	193,643	193,136	190,444
=EQUITY	938,373	1,185,881	1,429,302	1,867,236
-SALE COMMISSION	122,729	155,774	143,814	188,937
-SALES COSTS	84,336	26,755	29,163	31,747
=TAX GOOD OF CAP.GAINS	81,436	111,726	165,000	221,349
-TAX DUE ON DEPRE.RECAP	0	0	0	0
=SALES PROCEEDS	749,863	911,627	1,088,317	1,284,883
TAXABLE INCOME AT SALE				
CAPITAL GAINS INCOME	803,362	988,286	1,031,296	1,384,682
DEPRE. RECAP.INCOME	0	0	0	0
****PROFIT****				
SALE PROCEEDS	749,665	911,627	1,088,317	1,284,363
-DOWN PAYMENT	300,000	300,000	300,000	300,000
-INITIAL CLOSING COST	80,000	80,000	80,000	30,000
=NET SALE PROFIT	918,863	881,627	338,317	733,363
TOTAL NET GAINS				
NET SALE PROFIT	219,863	881,627	339,317	733,363
- SYNDICATION FEE	32,980	37,244	83,928	113,249
-OTHER TYPE FEE	4,597	7,633	11,166	15,100
= NET PROFIT RETURN	182,466	516,750	464,336	624,644
GEN.PTR. CASH PROFIT	72,665	126,700	185,736	250,688
LTD.PTR. CASH PROFIT	106,493	136,050	278,640	373,986
** TOTAL NET 9 GAIN **				
NET PROFIT RETURN	182,488	516,733	464,336	626,644
/(UNR.PYMT+CLOS.COST)	330,000	330,000	333,000	330,000
9 NET SALE PROFITS	+53.43%	+99.73%	+87.63%	+118.23%
2 TOTAL CASH FLOWS	-0.33%	+1.73%	+6.64%	+14.53%
9 TOTAL TAX SAVINGS	+7.90%	+14.76%	+36.49%	+24.66%
= 9 TOTAL NET RETURNS	+41.94%	+79.27%	+114.73%	+137.74%
/ NO. OF YEARS (CMPD)	1	2	3	4
= % RETURN/YEAR (CMPD)	361.94%	+32.77%	+89.02%	+86.71%
9 GENRL.PTR.GAINS	+48.66%	+84.47%	+123.84%	+167.11%
2 GEN.PTR. CASH FLOWS	-0.33%	+2.47%	+9.38%	+20.52%
2 GEN.PTR. TAX SAVINGS	+11.17%	+20.87%	+28.97%	+35.33%
= 9 TOTAL GEN.PTR.RETURN	+59.28%	+107.81%	+162.19%	+229.95%
/ NO. OF YEARS (CMPD)	1	2	3	4
= GEN.PTR. RTN/YR.(CMPD)	+59.28%	+44.36%	+37.09%	+34.06%
9LIMITED PTR.GAINS:	+29.01%	+33.01%	+73.35%	+98.66%
2 LTD.PTR.CASH FLOWS:	-0.32%	+1.46%	+5.53%	+12.15%
+ 9 LTD.PTR.TAX SAVER:	+4.91%	+12.58%	+17.13%	+20.92%
= 9 TOTAL LTD. RETURN:	+33.10%	+43.03%	+96.01%	+132.01%
/ NO. OF YEARS (CMPD)	1	2	3	4
= LTD.PTR. RTN/YR.(CMPD)	+35.10%	+22.00%	+25.15%	+23.42%

the Real Estate CONSULTANT
(C) COMSULTANT SYSTEMS INC.
Santa Barbara CA 93105

SUM OF TEN YEARS TAX DEPRECIATION
(C) CONSULTANT SYSTEMS INC.

```
PRICE = $  2,000,000
SALVAGE VALUE = $    400,000
NET DEPRECIABLE = $  1,600,000
LIFE = 15 YEARS
METHOD = 0 %
START100 MONTH = 1
```

YEAR	DEPRECIATION	BALANCE
1	200,000	1,800,000
2	168,667	1,215,333
3	179,333	1,640,000
4	180,000	880,000
5	164,667	755,333
6	133,333	600,000
7	120,000	480,000
8	106,667	373,333
9	93,553	280,000
10	80,000	200,000
11	66,667	133,333
12	53,333	80,000
13	40,000	36,000
14	26,667	13,333
15	13,332	0

DECLINING BALANCE TAX DEPRECIATION
(C) CONSULTANT SYSTEMS INC.

```
PRICE = $  2,000,000
SALVAGE VALUE = $    400,000
NET DEPRECIABLE = $  1,600,000
LIFE = 15 YEARS
METHOD = 175 %
STARTING MONTH = 1
```

YEAR	DEPRECIATION	BALANCE
1	164,367	1,413,353
2	164,889	1,264,444
3	145,652	1,102,793
4	130,659	974,133
5	113,649	860,485
6	100,390	736,095
7	86,678	671,417
8	78,332	593,085
9	64,193	533,892
10	61,121	462,771
11	55,990	800,781
13	47,881	581,000
15	42,127	518,963
14	57,212	281,750
15	32,871	248,880

DECLINING BALANCE TAX DEPRECIATION
(C) CONSULTANT SYSTEMS INC.

```
PRICE = $  2,000,000
SALVAGE VALUE = $    400,000
NET DEPRECIABLE = $  1,600,000
LIFE = 15 YEARS
METHOD = 193 %
STARTING MONTH = 1
```

YEAR	DEPRECIATION	BALANCE
1	153,333	1,466,667
2	120,222	1,344,444
3	112,037	1,232,367
4	102,701	1,129,707
5	94,142	1,033,334
6	86,297	948,267
7	79,100	870,162
8	72,313	797,848
9	66,471	731,178
10	60,931	670,246
11	55,858	614,392
13	51,199	563,193
15	36,933	516,236
14	43,022	473,238
15	39,437	433,802

STRAIGHT LINE TAX DEPRECIATION
(C) CONSULTANT SYSTEMS INC.

```
PRICE = $  2,000,000
SALVAGE VALUE = $    400,000
NET DEPRECIABLE = $  1,600,000
LIFE = 15 YEARS
METHOD = 100 %
STARTING MONTH = 1
```

YEAR	DEPRECIATION	BALANCE
1	106,667	1,493,333
9	108,667	1,386,667
5	108,667	1,280,000
4	108,667	1,173,333
5	106,667	1,066,366
6	106,667	960,000
7	108,667	853,333
8	106,667	746,666
9	106,667	640,000
10	108,667	533,333
11	106,667	426,666
33	106,667	320,000
13	106,667	213,333
14	106,667	106,666
15	106,667	-0

AMORTIZATION SCHEDULE
(C) COMSULTANT SYSTEMS INC.

```
LOAN AMOUNT      = $    300,000.00
MONTHLY PAYMENT  = $      2,466.03
INTEREST RATE    =        9.8509
START100 YEAR    =             82
BEGINNING MONTH  =              1
DAY PAYMENT DUE  =             13
```

DATE	INTEREST	PRINCIPAL	BALANCE
Interest For 81	0.00		
Jan/ 13 / 82	2,319.33	189.33	299,844.47
Feb/ 13 / 82	2,311.30	136.73	299,687.74
Mar/ 13 / 82	2,310.09	137.94	299,529.80
Apr/ 13 / 89	2,308.88	139.13	299,370.93
May/ 15 / 82	2,307.63	180.88	299,210.27
Jun/ 15 / 82	2,306.41	161.62	299,048.43
Jul/ 13 / 82	2,305.17	162.88	298,885.79
Aug/ 13 / 82	2,303.91	164.12	298,721.67
Sep/ 13 / 82	2,302.63	165.33	298,333.28
Oct/ 15 / 82	2,301.37	166.64	298,389.93
Nov/ 13 / 82	2,300.08	167.94	298,221.64
Dec/ 13 / 82	2,298.79	169.34	298,058.43
Interest For 82	97,468.61		
Jan/ 15 / 83	2,297.49	170.33	297,881.91
Feb/ 13 / 83	2,296.17	171.86	297,710.05
Mar/ 13 / 83	2,266.85	173.18	297,333.87
Apr/ 15 / 83	9,293.31	174.52	297,362.33
May/ 15 / 83	2,292.17	173.66	297,166.49
Jun/ 13 / 83	2,290.81	177.22	297,009.27
Jul/ 13 / 83	2,289.45	178.58	236,830.86
Aug/ 13 / 83	9,288.07	179.66	296,950.73
Sep/ 13 / 83	2,286.36	181.35	296,686.88
Oct/ 15 / 83	2,285.28	182.73	296,286.63
Nov/ 13 / 83	2,283.86	184.13	296,103.36
Dec/ 15 / 83	2,283.36	185.57	295,916.81
Interest For 83	27,480.62		
Jan/ 13 / 84	2,281.03	187.00	295,729.91
Feb/ 13 / 84	2,279.58	186.43	295,581.46
Mar/ 13 / 84	2,278.13	166 30	295,351.33
Apr/ 13 / 84	2,276.67	191.36	295,160.20
May/ 15 / 84	2,275.19	192.66	296,967.33
Jun/ 13 / 84	2,273.71	194.32	296,775.06
Jul/ 13 / 84	2,272.91	166.82	236,377.22
Aug/ 13 / 84	9,370.70	197.33	266,379.86
Sep/ 15 / 86	2,266.18	166.83	296,181.06
Oct/ 13 / 84	2,267.65	200.88	293,980.86
Nov/ 15 / 84	2,266.10	201.92	293,778.73
Dec/ 13 / 86	2,266.33	293.49	293,573.24
Interest For 84	27,274.88		
Jan/ 13 / 83	2,262.98	205.09	293,370.19
Feb/ 15 / 85	2,261.60	266.63	293,163.36
Mar/ 13 / 83	2,233.80	208.23	292,955.33
Apr/ 13 / 83	2,258.78	209.83	292,745.36
May/ 13 / 85	2,233.33	211.45	292,333.06
Jun/ 13 / 85	9,933.85	213.06	292,320.97
Jul/ 15 / 83	2,253.31	214.72	292,100.23
Aug/ 13 / 83	2,231.65	216.88	291,889.07
Sep/ 15 / 83	2,249.98	218.05	291,671.62
Oct/ 15 / 83	2,248.80	219.73	291,452.06
Nov/ 13 / 83	2,246.41	221.42	291,230.67
Dec/ 13 / 83	2,244.80	283.15	291,007.53
Interest For 83	97,060.68		

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AST RESEARCH INC.

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Hardware

BOARDS

Omni-Board

35 A memory board that features up to five functions on one board and provides the capabilities of an expansion chassis on a single board. It configures functions required and expands to maximum configuration when needed. Adapters provide for a parallel printer and up to two RS-232 asynchronous communications ports.

A game adapter option compatible with IBM software is also available and connects to two standard Apple joysticks. A clock/calendar option with rechargeable battery backup maintains the correct time and date even when the computer is off. *(List Price: Omni-Board $165; printer only, $165; printer and other configurations $265–$485)*

Automated Business Machines Incorporated
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439

Semidisk

36 A high-capacity memory board that operates like a 512K disk drive. Files can be written, read, and executed. Because it has no moving parts, it is faster than a floppy or hard-disk system. Data or programs from regular disks can be loaded for access. *(List Price: 512K $1,995, 1MB $2,995)*

SemiDisk System
P.O. Box CG
Beaverton, OR 97075
(503) 642-3100

CI-PCM Memory Module

37 A single board of 256K with on-board parity generator checker addressable as a contiguous block in 64K byte increments through 1MB. Other features include access time of 225 nanoseconds, cycle time of 400 nanoseconds and power requirements of +5V at 1.0A maximum. *(List Price: $575)*
Requires: One I/O expansion slot for 256K bytes.

Chrislin Industries, Inc.
31352 Via Colinas
Westlake Village, CA 91362
(213) 991-2254
TWX: 910-494-1253

Memory Expansion Module

38 A memory expansion module that comes in configurations ranging from 64K to 256K. Features include parity generation and utilization of 1MB addressing capability. One-year warranty. *(List Price: 64K $395, 128K $595, 192K $795, 256K $995)*
Requires: Not available.

PERSYST, Inc.
22957 La Cadena
Laguna Hills, CA 92653
(714) 859-8871

Versa-RAM

39 A card that expands memory from 64K up to 512K. A RAM disk and RAM spooler software package is included with the hardware, allowing emulation of a disk drive in memory and selection of up to 48K as a print buffer. A 256K board with two RS-232 serial ports and a parallel printer or I/O port is also available. Full even-parity error checking is provided. The card comes with a one-year warranty. *(List Price: $549 to $1,295)*

Memory Technologies Inc.
P.O. Box 6
Twelve Mile, IN 46988
(219) 664-5741

Controller and Memory Expansion Boards

40 A series of asynchronous communications controller boards with either one or two RS-232-C connector ports. The *MEM* memory board series ranges from 64K to 256K. *ADD-64* is a memory expansion kit that enhances memory in 64K increments. The *INTERNAL-16* expension kit expands the PC from its basic 16K to 64K. One-year warranty. Two other boards, the *COMM-1* and *-2* are also available. *(List Price: COMM-1 $85, COMM-2 $115, MEM Series $229–$616, ADD-64 $129, INTERNAL-16 $50)*
Requires: 64K.

PC²
1250 Ookmead Pkwy.
P.O. Box 678
Sunnyvale, CA 94086
(408) 749-9313

Asynchronous Communications Controller

41 Single- and double-ported communication cards that provide loopback functions of transmit/receive signals and input/output signals. A controller adds and removes start, stop, and parity bits. A baud rate generator allows rates from 50 to 9,600 baud. The product supports a variety of character formats and provides an interrupt system for handling transmit, receive error, data set, and line status interrupts. *(List Price: DMS-1 $139, DMS-2 $199)*

Datamoc Computer Systems
680 Almonor Ave.
Sunnyvale, CA 94086
(408) 735-0323

PC-MATE Stepper Motor Controller Board

42 A plug-in board that provides users with intelligent control of up to two stepper motors. The board interfaces the Cybernetic Micro-Systems CY512 Intelligent Positioning Stepper Motor Controller to the PC bus. Each motor is controlled by a CY512, allowing independent, simultaneous operation of both stepper motors. Features include external and internel TTL-compatible motor control and status lines for each motor, and two indapendently buffered, 8-bit TTL input and output ports for communication with other devices. One-year warranty. *(List Price: $495)*

Tecmor, Inc.
23600 Mercantile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

DS1 and DS2, Byod, Inc.

Copyright

Hardware

BOARDS

Model 4613, 4613-2, 4623-1

43 Three drilled, universal wiring boards for designing and prototyping interface circuits, memory expansion boards, input/output adapters, or other special functions. They are fully formed, are plug-compatible with IBM cards, and can be installed in any of the five expansion slots in the PC. The boards were designed for breadboarding, prototyping, and low-volume production. Model 4813, designed for solder-wire interconnections, features three-hole solder pads interspersed between heavy power and ground buses. Model 4813-2, designed for wrapped wiring, has a full ground plane on one side, a power plane on the other, and three alternate power buses. Model 4813-1 has heavy power and ground buses around the perimeter. Each board features different DIP configurations.

Model 4613 and 4613-2 feature drilled plated-through holes spaced on 0.1-inch centers. Boards also include a 3½-inch-square area with individually padded, plated-through holes for mounting discrete components or hardware.

Each board comes with layout planning sheets, an instruction card guide, and a universal I/O connector mounting bracket. *(List Price: Models 4613 and 4613-2 $59 each, Model 4613-1 $37)*

Vector Electronic Co., Inc.
12460 Gladstone Ave.
Sylmar, CA 91342
(213) 365-9661

Megaram

44 An on-board memory expansion board from 64K to 1MB that includes a memory write protect command, program-controlled banking capability in 128K or 512K blocks, memory error detection, flexible memory boundary selection, and on-board two DOS-supported asynchronous RS-232-C ports. *(List Price: From $495)*

Microcomputer Business Internotional
P.O. Box 16115
Irvine, CA 92713
(714) 553-0133, 727-0202

Bus Analyzer

45 A board that shows the status of the PC bus. It displays address, data, and control signals. Scope triggering capability is provided on address. *(List Price: $295 including instruction manual)*

Personal Computer Products
1400 Coleman Ave., Ste. C-18
Santa Clara, CA 95050
(408) 988-0164

DS Series

46 A series of integrated hardware and software systems that provide the PC with the CP/M 2.2 operating system for running CP/M-based software programs. It has plug-in compatible expansion circuit boards and software. The *DS1* and *DS2* contain 64K of parity RAM and a Z80B microprocessor. The DS Series normally appears as 64K additional RAM. When the disks are booted, the operating system becomes CP/M-2.2. The Z-80 and 8088 processors run as a distributed processing system with the Z-80 becoming the host CPU and the 8088 an intelligent I/O processor. The DS2 contains an IBM-compatible serial port with the ability to drive RS-422 lines. *(List Price: DS1 $660; DS2 with serial port $760; manual only, $40)*
Requires: 48K, one disk drive.

BYAD Inc.
5345 N. Kedzie Ave.
Chicago, IL 60625
(312) 539-4922

Baby Blue

47 An adaptar board that supports the following CP/M 5¼-inch disk formats: SuperBrain (3.0 DOS or higher), NEC, Cromemco (single sided, double density), Triumph-Adler Alphatronic (Origin-O CP/M), DEC VT180 or VT18X, Heath/Zenith (48-track-per-inch format).

The board functions as an accessory printed-circuit board and software package that allows users to run programs written for CP/M under DOS. It acts as a computer within a computer and supports a keyboard, video boards, a printer, and an asynchronous communications adaptar. The hardware consists of 64K dual-ported RAM with parity checking and a Z-80B microprocessor operating at 4.77 MHz (the same speed as the 8088 microprocessor). The software includes a translator and an intelligent converter that activates the Z-80B, reads files from CP/M formats, and determines executable machine-language files. *(List Price: $600 including board, software, manual; $980 WordStar and Mail Merge)*
Requires: 64K, two disk drives.

Xedex Corporation
1345 Ave. of the Americas
New York, NY 10105
(914) 368-0353

Three-in-One-Board

48 A hardware and software replacement for three IBM cards: two serial cards and one game adapter card. *(List Price: $339)*

RCB Designs
175 S. San Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

Lab Master

49 A board that provides data conversion capabilities and features a 16-channel, 12-bit analog to digital converter with a 30KHz conversion rate; a two-channal, 12-bit digital to analog converter; three 8-bit parallel ports; and five timer/counters. Options include programmable gain; 14- and 16-bit resolution; 40, 100, and 125KHz conversion rates; and expansion up to 256 channels. One-year warranty. *(List Price: $995)*

Tecmar Inc.
23600 Mercantile Rd.
Cleveland, OH 44122
(216) 464-7410
Telex: 241735

DSI-64K, -192K, -256K, -EX64K, -K64

50 Three parity cards that are compatible with PC hardware and software and can be placed in any free system slot. DIS-EX64K includes 64K RAM, upgradeable in 64K byte increments to 256K total RAM memory. DSI-K64 consists of nine 64K-bit dynamic RAM memory chips to add to the DSI-EX64K card, expanding memory by 64K bytes. *(List Price: DSI-64K $299; DSI-192K $599; DSI-256K $799; DSI-EX64K $350; DSI-K64 $175)*

DAVONC Systems, Inc.
1061 Terra Bella Ave.
Mountain View, CA 94043
(415) 985-7130

RS-232-C Asynchronous Adapter

51 Software and hardware compatible with the IBM Asynchronous Adapter, Quadram's board is available with either single or dual ports. The dual port version has two INS8250 LSIs and enables the user to operate two devices from one system expansion slot. A patch on the board is provided in the event future operating software will support additional devices. *(List Price: Serial adapter $129, dual port expansion kit $60)*

Quadram Corporation
4357 Park Dr.
Norcross, GA 30093
(404) 923-6666

Parallel Interface Adapter

52 A board containing a 25-pin, D-shell connector that allows the user to attach a parallel printer to the IBM PC. *(List Price: $105)*

Control Systems
2855 Anthony Ln.
Minneapolis, MN 55418
(612) 789-2421

PC-MATE E+EEPROM Expansion Unit

53 A unit that connects to the E+EEPROM Programmer/Reader Board to expand its capabilities. Like the main board, it can program 2716, 2732, and 2764 EPROMS and 2816 EEPROMs, but it adds an additionl 16 EPROM sockets, and the capability of programming up to 15 PROMS with the same data at the same tima. The memory capacity may be extended to 192K using 2764, 96K using 2732, and 46K using 2716 or 2818. It is primarily useful as a gang programmer. One-year warranty. *(List Price: $195)*

Requires: E+EEPROM programmer/reader board.

Tecmar Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

PC-MATE Lab Tender

54 A hardwara subsystem containing up to 32 channels of 8-bit analog to digital channels, 16 6-bit digital to analog channels, five 16-bit timers, and 24 digital I/O lines. It can accept 32 single-ended or 16 differential inputs at rates up to 50 KHz, and provides up to 16 analog outputs formed by 16 sample-hold amplifiers with a hold time of 30 msec at the maximum rata the computer can furnish. Two of the timers can be cascaded to provide time of day, and the digital I/O lines are programmeble end available for control or monitoring purposes. One-year warranty. *(List Price: $395)*

Tecmor Inc.
23600 Mercantile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

Prototype Boards

55 A prototype board that comes in 5, 9, and 13-inches. It features plated through holes and distributed +5V and ground. Documentation is included. *(List Price: 5-inch $30, 9-inch $50, 13-inch $65)*

Personal Computer Products
1400 Coleman Ave., Ste. C-18
Santo Clara, CA 95050
(406) 988-0164

PC-netI Adapter Card

56 An adapter card capable of local area networking using CATV coaxial cable. It provides 64K address space allowing for more than 64,000 network users. Software features include virtual disk capability to ellow multiple IBM PCs to share a single hard disk, shared printer and print files spooling, file sharing and transfer, and alectronic mail. *(List Price: $595)*

Orchid Technology
1084 Hillview Dr.
Milpitas, CA 95035
(408) 942-8660

PC-MATE Scribe Tender

57 A parallel port and two serial ports that allow multiple I/O capability in a single expansion slot. An optional software package, Softswitch, is also available. Scribe Tender has two serial ports that emulate IBM serial ports, the first of which has a fixed address that coincides with the COM1 address while the second can be addressed to any I/O location. The printer port is functionally equivalent to tha IBM parallel printer adaptar. Softswitch transparently redirects system print output to a serial port. *(List Price: $195, with Softswitch $220)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

Error Correcting RAM

58 A memory card that corrects a single-bit error in any byte and detects a dual-bit error. It is designed for applications where memory must be nonstop. Any RAM chip in a row can be removed and the memory will continue to function perfectly at full system speed. *(List Price: $1,199)*

RGB Designs
175 S. Son Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

PC-MATE Extender Card

59 A fused bus extender card that brings all bus signals to a top-located bus connector 5 inches above the system unit, providing for repair and testing of boards. Faatures include fully interlaced grounds, a wire wrap araa for special circuitry, gold contacts, and connection points for oscilloscope or logic analyzer probes. One-year warranty. *(List Price: $80)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

10 MByte Floppy

Resolves Storage Backup Dilemma

Now there is a proven, effective disk storage subsystem, the BC-20, for the IBM Personal Computer and S-100 based microcomputer systems.

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BC SYSTEMS INC.
1016 East 31st Street
LaGrange Park, Illinois 60525
(312) 579-0672

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Address _____

_____

Telephone _____

BC SYSTEMS INC.
1016 East 31st Street
LaGrange Park, Illinois 60525
(312) 579-0672

Hardware

BOARDS

PC-MATE E+EEPROM Expansion Unit

60 A unit that connects to the E+EEPROM Programmer/Reader Board to expand its capabilities. Like the main board, it can program 2716, 2732, and 2764 EPROMS and 2816 EEPROMs, but it adds an additionl 18 EPROM sockets, and the capability of programming up to 15 PROMS with the same data at the same time. The memory capacity may be extended to 192K using 2764, 96K using 2732, and 48K using 2716 or 2816. It is primarily useful as a gang programmer. One-year warranty. *(List Price: $195)*

Requires: E+EEPROM programmer/reader board.

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

PC-MATE Lab Tender

61 A hardwere subsystem containing up to 32 channels of 8-bit analog to digital channels, 16 8-bit digital to analog channels, five 18-bit timers, and 24 digital I/O lines. It can accept 32 single-ended or 16 differential inputs at rates up to 50 KHz, and provides up to 18 analog outputs formed by 16 sample-hold amplifiers with a hold time of 30 msec at the maximum rata the computer can furnish. Two of the timers can be cascaded to provide tima of day, and the digital I/O lines are programmable and available for control or monitoring purposes. One-year warranty. *(List Price: $395)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

DSI-ASYNC, DSI-ASYNC+RAM

62 DSI-ASYNC is a dual asynchronous serial card including software and cables. DSI-ASYNC+RAM is an expandable memory card with parity including 64K bytes of RAM, upgradeable in 64K-byta incraments to 256K bytes total RAM memory, plus dual asynchronous serial ports. Cables and software are included. *(List Price: DSI-ASYNC $199, DSI-ASYNC+RAM $499)*

DAVONG Systems, Inc.
1061 Terra Bello Ave.
Mountoin View, CA 94043
(415) 965-7130

256K Memory Board

63 A 256K memory board that contains a memory address decoding scheme implemented vie an on-board configuration switch, which allows each 64K segment on the board to be either disabled or based at any 64K boundary from 0 to 1 MB. This feature allows the board to be used in conjunction with the CPU board-mounted 64K memory or mixed with 64K expansion boards. It takes one expansion slot. *(List Price: $598, quontities of 100 $549 eoch)*

Zobex
7343 J. Ronson Rd.
Son Diego, CA 92111
(714) 571-6971

Quadboard

64 A combination of four IBM PC boards: a memory expansion board, a serial RS-232-C asynchronous adapter, a time clock, and parallel interface card. The Quadboard leaves slots frae for further memory expansion. Tha full-size board is compatible with IBM hardware and includes 256K memory expansion, clock/calendar, parallal printer I/O, end an asynchronous RS-232 communications adapter.

Memory expansion is socketed and expandable in 64K increments to 258K. Full parity generation and checking is included. A Quadboard feature allows parity to be switch-disablad to avoid system lockup upon error detection. The DIP switches allow it to ba addrassed starting on any 64K block, so it takes up as much address as it has mamory. Memory access and cycla time meat all IBM specifications.

Tha board aliminates tha manual entering of a date on the system bootup by providing for the clock and all software routines necessary for inserting tha appropriate programs in tha disks. Tha internal computer clock is compatible with most software routines that use clock functions. *(List Price: 64K $595, 128K $775, 192K $895, 256K $995)*

Quodrom Corporotion
4357 Pork Dr.
Norcross, GA 30093
(404) 923-6666

PC-MATE Protozoa

65 A prototyping board featuring a large wirewrap surface of 42 square inches for hardware prototype development. All standard size I.C. packages fit onto the board, and room for connectors is provided at tha back. *(List Price: $80)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

PC-MATE Dynamic Memory Options

66 A board that can be configured to provide from 64K to 256K bytes of memory using only one expansion slot. Parity is a standard featura and it is fully compatible with the IBM parity protocol. It is addressable on any 64K boundary throughout tha 1MB address range and is compatible with IBM power-on diagnostics. *(List Price: $495–$1,295)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

PC-MATE Expansion Chassis

67 An expansion chassis that increases the number of expansion slots from five to a new system total of 11 slots. It has its own power supply and requires no additional software. It interfaces to the IBM system unit through an expansion adapter card that may be placed in any available slot in the main unit. Options includa the PC-Mate Winchester disk drives. One-year warranty. *(List Price: $945)*

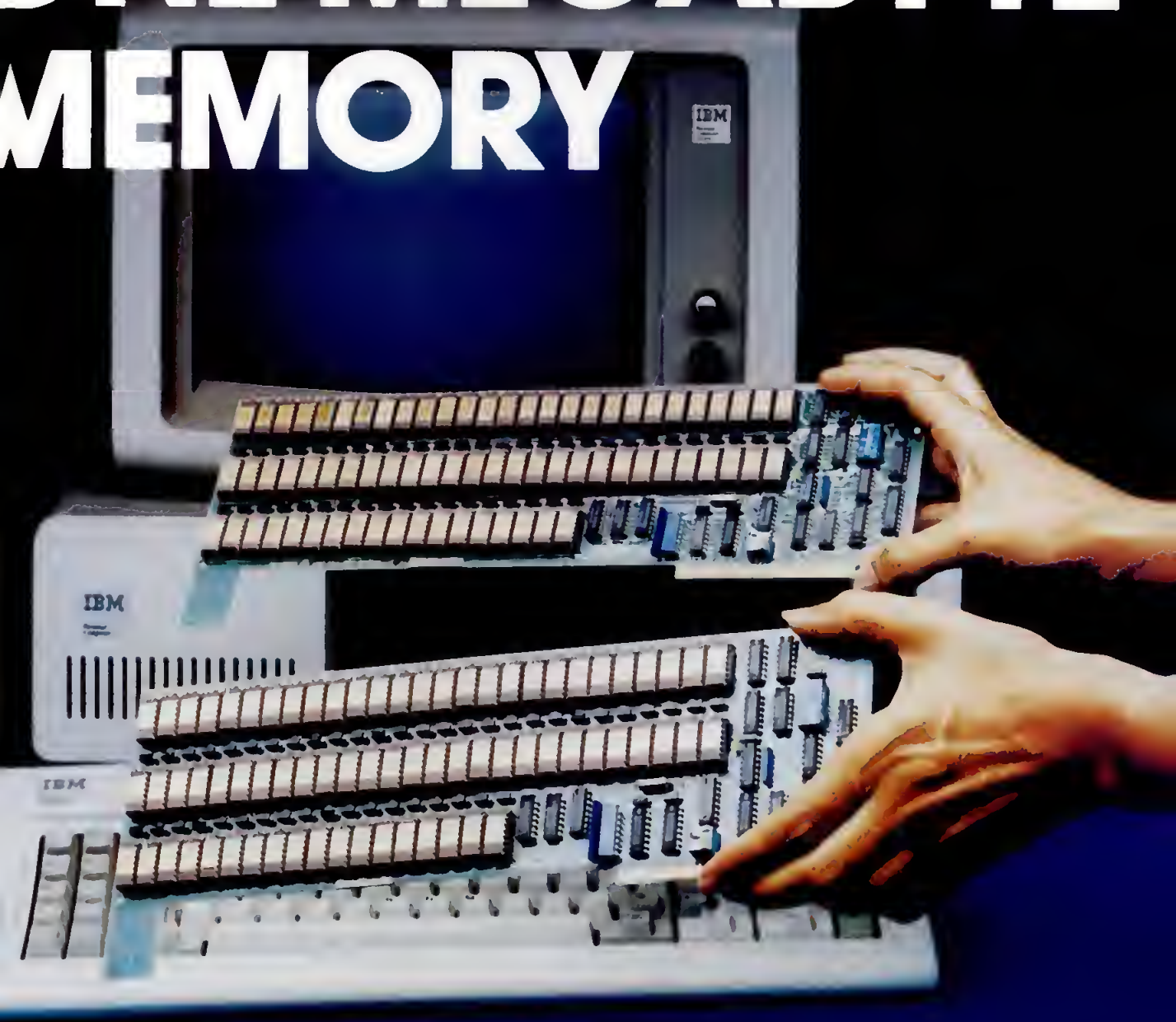
Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

PC-MATE IEEE-488 (GPIB) Interface

68 A fully functional interface to the IEEE-488 bus that allows data transfers using either programmed I/O or direct memory access, as well as a variety of user-selectabla hardwara interrupts. Tha board implements the Intel 8291, 8292, 8293 chip set, providing IEEE-486 Talker, Listener, and Controller capability. It ellows deta trensfers using either programmed I/O or direct memory access. One-year warranty. *(List Price: $395)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

ONE MEGABYTE MEMORY



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06 Los Altos Ave., Los Altos, CA 94022 (415) 941-5500

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SEATTLE COMPUTER

1114 Industry Drive, Seattle, Washington 98188

Hardware

BOARDS

Memory Expansion Board

69 A socketed memory board with parity checking that is user-expandable up to 192K. Standard 64K dynamic RAM chips are used on tha board. Switches provida for both the selection of beginning address and mamory bank select. *(List Price: 64K $395, 128K $595, 192K $795)*

Quadrom Corporotion
4357 Pork Dr.
Norcross, CA 30093
(404) 923-6666

PC-MATE Speech Master

70 A board that provides flexible voice output capability through two methods: a ROM-based vocabulary speech synthesis chip set for high-quallty speech but limited vocabulary, and a single-chip phoneme synthesizer giving less human speech but an unlimited vocabulary. An on-board audio amplifier and speaker are provided as well as an RCA phone jack. An optional software support package allows for complata text to speech translation including screen to voica and print of ASCII text directly to the Speech Master. One-yaar warranty. *(List Price: $395)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

Parallel Interface Card

71 A perallel intarface that has a standard Centronics connector, pin-out, and timing with hendshaking. Complete with en 8-foot shialded cable, IPIC operates most parallel printers including tha IBM Dot Matrix Printer. *(List Price: $159)*

Requires: Printer.

Quodram Corporation
4357 Park Dr.
Norcross, CA 30093
(404) 923-6666

Time Clock

72 A clock/calendar board that eliminates the need to enter the current date at each bootup. It includes software that will poll tha tima clock for this information. All current software can be used to access seconds, minutes, hours, month, data, and year through normel system and BASIC commands. A Ni-Cad rechargeable battery is on the board. *(List Price: $159)*

Quodram Corporation
4357 Park Dr.
Norcross, CA 30093
(404) 923-6666

PC-MATE RAM/ROM Board

73 A means for developing programs using static RAMs and transferring them to EPROMs, eliminating the need for floppy disks in many applications. Tha static RAMs used on the board are byte-wida mamories allowing the board to contain a mixture of RAM and preprogrammed ROMs. The board may be used with any one of thrae densities of chips: 2K, 4K, or 8K. The board has 18 sockats, providing a possible address range of 32K, 64K, or 128K, divided into eight equal segments, any of which may be hardware disabled, ellowing holes for other devices. One-year warranty. *(List Price: $195)*

Tecmor Inc.
23600 Mercantile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

PC-MATE E+EEPROM Programmer/Reader

74 A board thet enables users to program and read EPROM and EEPROM. The board has eight sockets, with a capacity of 64K bytes using 2764 PROMs. Tha board can ba used to program one PROM at a time or to gang program multiple PROMs. It also enables data to be stored in nonvolatile memory that can be changed. No external connections are necessary end all sockets may be write-protected. Any socket may be softwara disabled to remove its PROM from the memory address space. Besides byte by byte write and erase, an entira EEPROM may be erased with en overwrite operation. One-year warranty. *(List Price: $395)*

Tecmar Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

Multifunction Card

75 A single multifunction card that provides 64, 128, 192, or 256K memory, a time of day clock and calendar (automatically sets system time and date), a serial port (for printer or communication port), end a parallel port for a printar. Also included is an encryption decodar that reveals a uniqua serial number or code. The decoder provides a machine-dependent lock that ensures single machine usage of certain software products. *(List Price: 64K $565, 128K $735, 192K $875, 256K $975)*

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

CP/M-80 Adapter

76 An adapter that makes available CP/M-80 programs developed for the Z-80 and 8080 processors. Faaturing a Z-80 processor and 64K on-board memory, tha adapter comes completa with the software necessary to implement CP/M-80 on the PC. *(List Price: $545)*

Automoted Business Mochines fncorporated
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439

BSR-X10 Adapter

77 A security adapter that converts the PC into a system to control any alectrical epplianca in the user's home or office. Inputs are provided for monitoring tha sensor for security and safety control. *(List Price: $215)*

Automoted Business Mochines fncorporated
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439

PC-MATE Time Master

78 A clock calandar board with software that automatically sets the time and date aach time the PC is initialized. The on-board battery assures accuracy of time and date for up to 5 years with the computer powered down. Features include counters that track intervals ranging from 1msec to a full day or month. One-year warranty. *(List Price: $99)*

Requires: 18K, one disk drive.

Tecmor Inc.
23600 Mercantile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

Big Blue

79 An auxiliary processor PC board that enables users to run programs written for the CP/M operating system on the PC. Features include a Z-80B microprocessor running at 5.5 MHz, 64K memory, serial or parallel ports, a calendar clock, and a hard disk interface. One-year warranty. *(List Price: $595)*

Requires: 64K, one disk drive.

QuCes, Inc.
178 Moin St.
Metuchen, NJ 08840
(800) 631-5944, (201) 548-2135

Memory Board

80 A memory board that comes in 0K, 64K, 128K, and 192K configurations and features 2-bit error detection and 1-bit error correction. *(List Price: 0K $699, 64K $799, 128K $899, 192K $999)*

VR Dato Corporotion
777 Henderson Blvd. N-6
Folcroft, PA 19032
(800) 345-8102, (215) 461-5300

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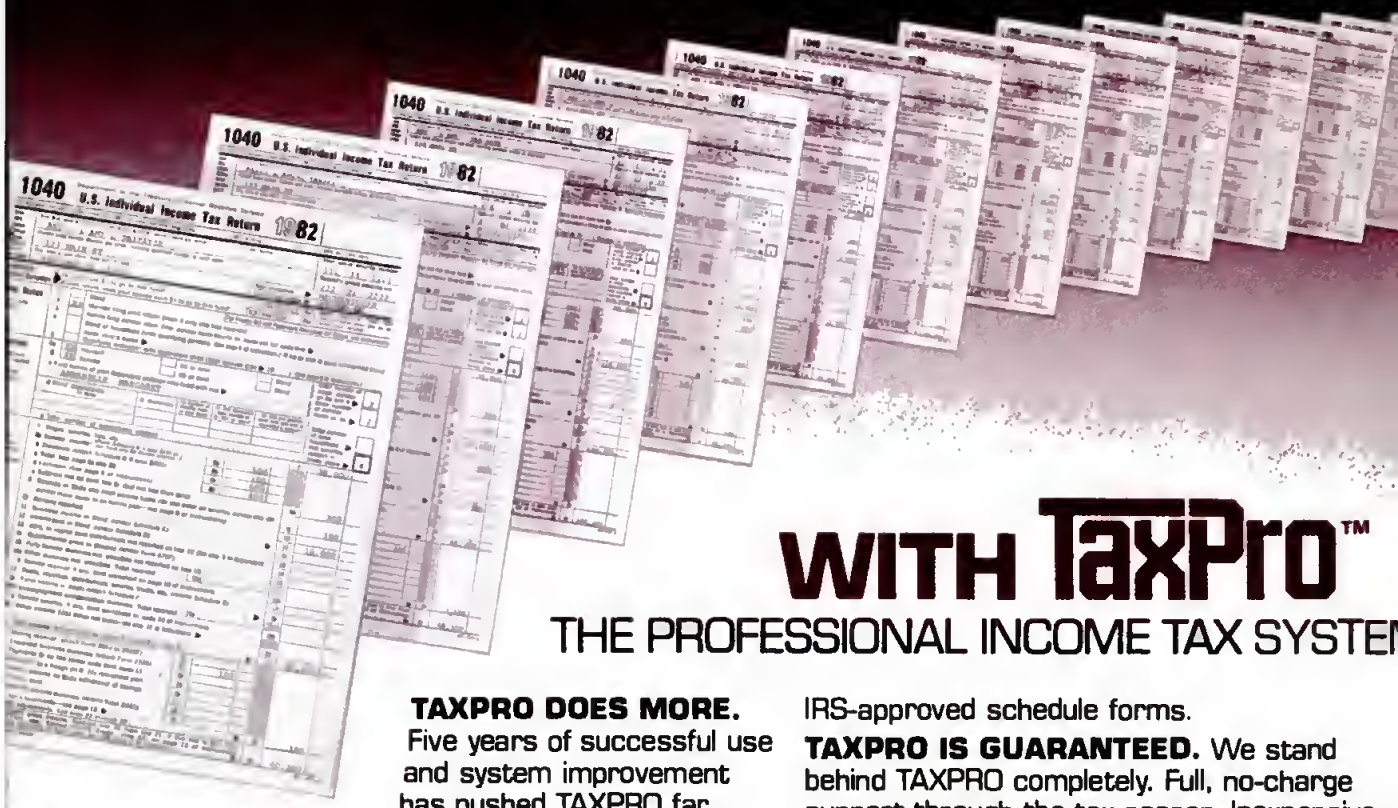

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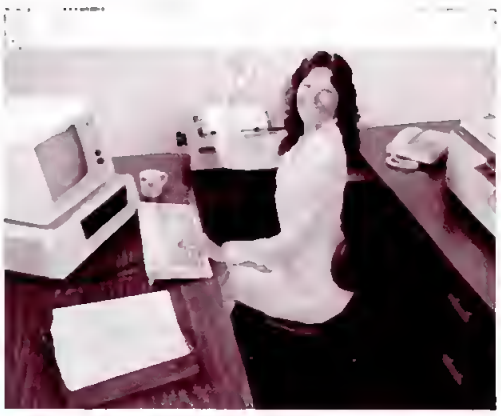

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Hardware

BOARDS

RAMCard, RAMChips

81 A memory board/RAMDrive system that provides disk emulation capabilities. It is available in 64K, 128K, 192K, and 256K configurations, and includes a disk enabling the computer to use either some or all of the memory as RAMDrive for disk I/O. This feature is valuable for programs that require repeated disk access. Users may expand lower memory configurations themselves by purchasing RAMChips, a 64K upgrading kit. Up to three RAMCards may be installed at ona time. One-year warranty. *(List Price: RAMCord, 64K $495; 128K $695; 192K $895; 256K $1,095; RAMChips $200)*

Microsoft Corporotion
10700 Northrup Way
Bellevue, WA 98004
(206) 828-8080
Telex: 328-945

MM64-1, -2, -3, -4 Memory Expansion Boards

82 Four user-expandable memory boards from 64K to 256K. All boards include parity and are supplied with a complete manual, a memory test disk, and a snap-in card guide. A package of nine 64K bit chips for additional memory expansion is provided. Five-year warranty for manufacturer-implemented boards. *(List Price: MM64-1, 64K $400; MM64-2, 128K $510; MM64-3, 192K $620; MM64-4, 256K $730; 64K-bit chips $108)*

Micro Motch
10343 Commerce Ave.
Tujungo, CA 91042
(213) 353-5929

MM39-1 Extender Board

83 A board that extends any expansion bus connector up and above the PC's system unit; both sides of the extended board are accessible for testing. Boards are secured in place with supplied hardware. *(List Price: $45 including user monual)*

Micro Match
10343 Commerce Ave.
Tujungo, CA 91042
(213) 353-5929

Floppy Drive Controller

84 A controller that is functionally identical to the IBM floppy disk drive interface. It can interface up to four single- or dual-sided disk drives, two internal and two external. Instaliation is documented. Tha FDC includes a cable to interface the intarnally mounted drives. *(List Price: $195)*

Maynord Electronics
P.O. Box 3322
Longwood, FL 32750
(305) 869-8058

Persyst

85 A dual-channel asynchronous communications controller available in both single- and dual-channel modals. Tha boards provide a rotating jumper plug that eases communications cabling by switching the transmit and receive signals in the connector. Programmable baud rates range from 50 to 19,200. The single-board controllers support 5-, 6-, 7-, or 8-bit characters with 1, 1½, or 2 stop bits. Odd or no parity bit generation and detection are included.

A fuily prioritized interrupt system that controls the transmit, receive, error, and modem status change interrupts, while advanced diagnostic cepabilities provide loopback functions for transmit/receive and input/output signals. Full duplex operation is supported, and double buffering eliminates the need for precise synchronization. Tha boards also feature full modem support, false start bit datection, and line break detection and generation. *(List Price: Single-chonnel cords $130, dual-chonnel modems $195)*

Personol Systems Tech., Inc.
22957 La Codeno
Laguno Hills, CA 92653
(714) 859-8871

Memory Boards

86 Two memory boards, expandable to 256K, starting at 64K and 128K respectively. A 256K RAM board with a 64K expansion kit and a dual-line asynchronous controller board are also available. All boards come with a one-year warranty. *(List Price: 64K $299, 128K $450, 256K $750, exponsion kit $175, controller boord $159)*

Micro Express
3857 Birch St. #109
Newport Beoch, CA 92660
(714) 859-7575

PC-Mate Scribe Master

87 A communications system that includes three RS-232 serial ports operating at baud rates up to 230K as wali as at conventional baud rates, and 24 TTL-compatibie I/O lines. Two of the serial ports may be connected to DMA channels for high-speed (230K baud) CPU-transperent operation. Pipelined operation on two DMA channels allows maximum baud rates of 460K. Features include three high-speed asynchronous ports and independently selectable baud rates ranging from 110K to 115K. Ona-year warranty. *(List Price: Scribe Master $395, serial cable $25, parallel cable $25)*

Tecmar Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241-735

CODA Card

88 A memory board that provides up to 256K socketed memory, has one parallal I/O, ona serial I/O, and a time/date clock with battery backup. *(List Price: $495)* **Requires:** 64K.

CODA Inc.
P.O. Box 1054
Lilburn, GA 30247
(404) 925-0640

PC-Mate DADIO

89 A digital-to-analog and digital input/output board that offers high-speed digital-to-analog conversion, including real-time applications. It controls up to 24 digital devices and supports four independent high-speed DACs with selectabla output ranges. Double buffering capabilities are available, allowing all four channels to change to new values simultaneously. The digital I/O lines can be configured as input or output in groups of eight or 12 lines. One-year warranty. *(List Price: $395)*

Tecmar Inc.
23600 Mercontile Rd.
Cleveland, OH 44122
(216) 464-7410
Telex: 241-735

OMNI-Board

90 A board thet allows PC configuration without an expansion chassis. Features include two RS-232 asynchronous communication ports for attaching printers or plotters or for maintaining telaphone hookup with other computers, e printer adapter with Cantronics parallel interface, and a game adepter. OMNI-Board features up to five five edapters per board end e single expansion slot. Tha system includes a 24-hour clock and calendar with leap year controls and day-of-week registers. *(List Price: $485)*

Automoted Business Mochines, fnc.
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

MM77-1 Prototyping Board

91 Up to 105 14-pin or 98 16-pin ICs can be mounted on this board. ICs on .3, .4, .6 inch or any separation up to 3 inches will fit. A mounting bracket and card guide are included. An optional 37-pin subminiature D connector can be used to give access to external signels. *(List Price: $50, 37-pin connector $18)*

Micro Motch
10343 Commerce Ave.
Tujungo, CA 91042
(213) 353-5929

The Davong DSI-501 fits into the second slot of the IBM Personal Computer to provide up to 5 MB formatted (6 MB unformatted) storage for $1995. The DSI-514 provides up to 12 MB formatted (14 MB unformatted) storage for just $2695*.

$1995.* PLUG IN HARD DISK FOR THE IBM® PERSONAL COMPUTER.

One low price buys you the expanded storage, speed and reliability of a Winchester technology hard disk system. Both the DSI-501 and the DSI-514 support IBM DOS®. Full software support includes an installation program and complete diagnostics.

The DSI-ASYNC+ RAM provides 64K RAM, expandable to 256K with parity, and 2 serial I/O ports on one card. Select the option and save space as well as dollars. The price of $495* includes extensive software for flexibility.

More low-priced expansion options. Our wide selection lets you mix and match products to fit your needs and your pocketbook.

Choose the DSI-64K, DSI-192K, or the DSI-256K fixed RAM cards with parity. For powerful upgrades, select the DSI-EX64K—a 64K RAM card that easily expands to up to 256K with the addition of individual memory chips. Prices start at $299*. Also available is the DSI-ASYNC, a dual port serial I/O card priced at $199*.

Expand your IBM Personal Computer for a lot less money. Take this ad to your local computer retailer and ask for products by Davong.

DAVONG Systems, Inc.

1061 Terra Bella Avenue
Mountain View, CA 94043
(415) 965-7130

*Manufacturer's suggested retail price. Includes all required components.
IBM Personal Computer and IBM DOS are registered trademarks of IBM Corporation.

Hardware

BOARDS

Game Control Adapter

92 An interface device that allows the user to attach game paddles and joysticks. The joysticks and paddles themselves are not available directly from IBM but, when used with the PC, they are useful in graphics applications, video games, and for the attachment of light pens. *(List Price: $55, IBM Product Center prices)*

IBM Corporation
System Products Division
P.O. Box 1328
Boca Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alaska, Hawaii

IEEE-488 Interface

93 A GPIB-488 instrumentation interface that is ideal for laboratory and industrial control applications. Software drivers are available for total IEEE-488 Bus Control from BASIC. The new NEC7210 Chip provides best IEEE-488 Bus Control. A European modal of the interface is also available. *(List Price: $395)*

Micro Interface, Inc.
3111 South Valley View Blvd. #1-101
Las Vegas, NV 89102
(702) 871-3263

OMNI-Board

94 A board that expands the PC by integrating five peripheral adapters on one board. It can include a parallel printer adapter, clock/calendar, RS-232 asynchronous communication adapters, and an Apple II-compatible joystick adaptar. The board may be configured in the field to add any function required with the appropriate OMNI-board upgrade kit. *(List Price: $165-$485 depending on configuration)*

Automated Business Machines, Inc.
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439

Memory Expansion

95 Memory expansion modules that feature storage capabilities on one card from 64K to 256K in 64K byte increments. All memory chips are socketed for easy field expansion, and the cards are designed to meet IBM memory interface requirements including parity protection and high-speed dynamic RAMs to ensure that no wait states are required when accessing memory. Address decode can be user configured to select any 64K byte boundery within the 1 MB processor address range. *(List Price: 64K $279, 128K $379, 192K $479, 258K $579)*

Automated Business Machines, Inc.
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439

Asynchronous Communications Adapter

96 A device that enables the PC to be linked to a wide range of outside devices or networks, including other IBM computers, another PC, a large host system, or laboratory instruments. The communications option gives users access to tha Dow Jones News/Retrieval Servica and The Source. Other features include the ASCII character set, modem and deta transfer control, complete status reporting, and even/odd/no parity generation and detection. The communications adapter supports 5-, 6-, 7-, or 8-bit characters and speeds of 50 to 9600 baud. An asynchronous communications support package is also available. *(List Price: $150, IBM Product Center prices)*

Requires: 16K, audio cassette storage device; application programs in BASIC require one disk drive, 32K.

IBM Corporation
System Products Division
P.O. Box 1328
Boca Raton, FL 33432
(800) 447-4700, 322-4400 Illinois,
447-0890 Alaska, Hawaii

Development Card

97 A full-size prototyping card with longitudinal power and ground buses. It features plated-through holes, an extra rigid support bracket, and a card edge guide. *(List Price: $49)*

Automated Business Machines, Inc.
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439

Memory and Prototyping Boards

98 A line of memory boards that includes Model SDI256, available from 64K to 256K; Model SDI256+ Async, a memory board with asynchronous interface (RS-232-C and current loop) available from 64K to 256K; Model SDI64, a miniature 64K nonfield expandable memory board; Modal SDI576+ Async, a memory board with asynchronous interface (RS-232-C and current loop) available from 64K to 576K. One-year warranty. *(List Price: Model SDI256, from 64K to 256K, $295-$745; Model SDI256+ Async, from 64K to 256K, $445-$895; Model SDI64 $195)*

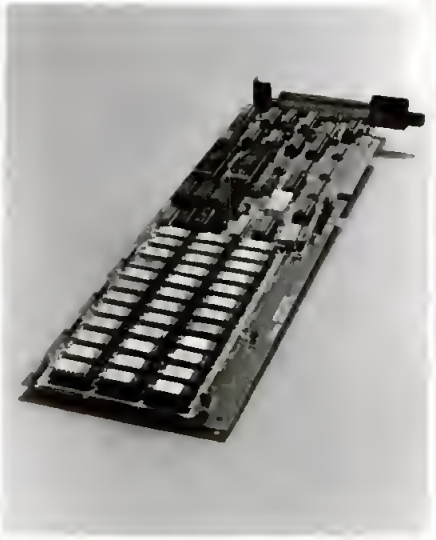
Requires: RS-232-C.

Sigma Designs, Inc.
P.O. Box 3765
Santa Clara, CA 95055
(408) 496-0536

CP/M-80 Adapter

99 An independent Z-80B auxiliary processor running at 4.77 MHz. Communication between processors is controlled by a pair of parallel I/O ports providing the PC with full control to halt, interrupt, and request the bus of the Z-80 processor. It provides on-board, parity-protected 64K byte local memory capable of doubling as a 64K memory expansion. Software is supplied for the execution of CP/M-80 programs. The Z-80 can interrupt and provide bus status to the PC, and high-speed, volume data interchange may be performed by direct memory to memory transfer to and from the Z-80. *(List Price: $545)*

Automated Business Machines, Inc.
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439



***Spectrum Series Board**, Personal Systems Technology, Inc.*

Xebec Hard Disk Kit

100 A hard disk kit consisting of a 5MB, 5¼-inch Winchester disk drive, single board controller, host adapter personality card, power supply, cable set, cabinet, software, and documentation. Aimed at both the home/hobbyist and system integrators, kit assembly does not require extensive assembly and technical knowledge on the part of the user. Component parts are preassembled and need only be connected. *(List Price: $1,300)*

Requires: Hard disk adapter (included).

Xebec
432 Lakeside Dr.
Sunnyvale, CA 94086
(408) 735-1340

Hardware

BOARDS

Expansion Chassis

101 An expansion chassis that provides additional memory, frees up the "printer-bound" operator, allows for access to S-100 systems, end extends disk storage capabilities.

System specifications includa five-slot expansion bus, buffered address and control lines to the expansion bus, and multiple disk storage combinations such as hard disk (5 to 20MB formatted), smart hard disk controller, 96 TPI floppy disk drive (600K formatted), two 96 TPI slimline floppy disk drives (1.2MB formatted). *(List Price: $1,100)*

MICROBYTE/ASAP
1198 E. Willow St.
Signol Hill, CA 90806
(800) 421-7701, (213) 595-6431 Californio
Telex: (814) 656 491 (ETYB LCB)

256K Expansion Module

102 A RAM expansion module that provides 256K of additional RAM for the PC. Board specifications include parity errors reported to bus I/O check line. On-board parity ganeration and checking, hardware bank select/deselect, and hardware relocatable on 64K boundaries are also included. It is also available depopulated with 64K, 128K, or 192K. *(List Price: $750)*

MICROBYTE/ASAP
1198 E. Willow St.
Signal Hill, CA 90806
(800) 421-7701
(213) 595-6431 Californio
Telex: (814) 656 491 (ETYB LGB)

S-100 Interface Adapter

103 An interface adapter that allows the PC to communicate with S-100 memory and peripherals. Board specifications include utilization of up to 512K of S-100 mamory, up to 512 I/O port addresses, special S-100 applications hardware, four hardware routed interrupts, and individual softwere anable/disable for each interrupt. *(List Price: Not available)*

Requires: S-100 mainframe.

MICROBYTE/ASAP
1198 E. Willow St.
Signol Hill, CA 90806
(800) 421-7701, (213) 595-6431 Californio
Telex: (814) 656 491 (ETYB LGB)

Memory Board

104 Four plug-in memory expansion boards that can expand the system from 64K to 256K with full IBM hardware and software compatibility. Boards occupy only one slot on the PC. Each board comes with a 2-year limited warranty. *(List Price: 64K $375, 128K $475, 196K $575, 256K $675)*

Requires: Not available.

Mocrolink Inc.
1150 E. Stonford Ct.
Anoheim, CA 92805
(800) 854-3332, (714) 634-8080 Californio

64K EPROM Expansion Module

105 An expansion module that adds an additional 16K to 64K of EPROM on a single board. It can utilize 2716, 2732 and 2764 type ROMs and features hardwere-selectable addressing. *(List Price: Not available)*

MICROBYTE/ASAP
1198 E. Willaw St.
Signol Hill, CA 90806
(800) 421-7701, (213) 595-6431 Californio
Telex: (814) 656 491 (ETYB LGB)

FASTPAK

106 An 8087 numeric data processor that plugs into the vacant 40-pin sockat on tha main board. It includes instructions on how to plug it in and which switches to set. A manual, the 87/88 Cuide, and ona of five 8087 libraries (87BASIC, 87PASCAL, 87MACRO, 87FORTRAN, or 87COBOL) are also included. *(List Price: $375)*

MicroWore
P.O. Box 79
Kingston, MA 02364
(617) 746-7341

Color/Graphics Monitor Adapter

107 An adapter that enables tha PC to provida users with a text system capable of displaying 256 different characters in any of 16 foreground and aight background colors, in 40 or 80 columns, and in upper- and lower-case. It can also display graphics in four colors on a color monitor or color television set. *(List Price: $300, IBM Product Center prices)*

Requires: Color monitor or color TV, RF modulator.

IBM Corporotion
System Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alaska, Hawoii

Pack-Comm

108 A communications system that upgrades the PC to a voice and data communication terminal. It allows an avarage of 20 voice messages to be stored in a two-drive system; an average of 350 voice messages can be stored on a 5 MB hard disk. Features includa an optional integral 300 baud modem with auto-dial and answering capability. *(List Price: $495)*

Requires: Not available.

Personol Dato Systems, Inc.
1110 Wrigley Way
Milpitas, CA 95035
(408) 262-7880

Memory Expansion Kits

109 A 18K Memory Expansion Kit and 32K and 64K Memory Expansion Options (with parity) are available from IBM. *(List Price: 16K Memory Expansion Kit $90; 32K Exponsion Option $325; 64K Exponsion Option $350; IBM Product Center prices)*

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois,
447-0890 Alosko, Hawoii

Add-on Memory Card

110 An add-an memory card that uses 64K dynamic RAM chips. The card comes in four separate memory increments: 64K, 128K, 192K, and 256K. *(List Price: 84K $425, 128K $525, 192K $625, 256K $725)*

Apporot, Inc.
4401 S. Tamorac Pkwy.
Denver, CO 80237
(303) 741-1778

Monochrome Display Graphics Controller Board

111 A graphics controller board that provides full 720 x 350 resolution, bit mapped display, 64K bytes that provide two display pages, and simultaneous high-resolution graphics and text capability. It is compatible with the IBM monochrome adaptar card and callable from both BASIC and Pascal programs. *(List Price: $495)*

Orchid Technology
1084 Hillview Dr.
Milpitos, CA 95035
(408) 942-8660

1st Class Mail.™
It does everything but lick the stamp.

We've made a mailing list program worthy of today's remarkable microcomputers. It's called *1st Class Mail*™—but you can use it for anything you'd keep on a card file, like your car's servicing history or your address book. And it's not only the most flexible mail list/utility data base you can buy—it's also incredibly easy to use.

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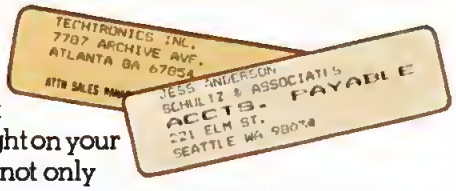
Since you're not stuck with the same old name/company/street/etc. format, you can make the label look like whatever you want. And with the new feature that lets you print right on your envelopes, you not only save time—you give your correspondence a very professional look.



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1st Class Mail™ lets you search and sort in any of 12 different categories. So you can organize your mailings by zip code (up to 10 digits), alphabetical order, state, company, any way you want. Fast. And if you're using *1st Class Mail*™ for another type of data base, like a record collection, you can sort by whatever categories you choose— from String Quartets to Rhythym and Blues. It's extremely flexible.

Personalized entries.

One of the ways we've made *1st Class Mail*™ especially "user friendly" is by letting you create your own headings for each entry line. So your computer speaks *your* language.

The form letter feature.

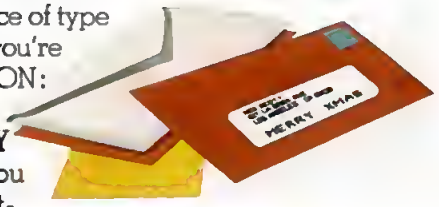
1st Class Mail™ is compatible with many word processors, such as Screenwriter II,™ Applewriter II,™ Applewriter III,™ Pie Writer,™ and WordStar/Mailmerge.™ Just a few simple commands and you can combine your form letters with your mailing list for professionally formatted documents. All automatically.

Automatic entry.

If time is money, this feature translates minutes directly into dollars. It automatically includes, or searches for, particular categories in each entry you record. Repetitive typing and sorting becomes a push-button joy.

The special message line.

Now you can put a special message anywhere on the label—in a choice of type styles. Whether you're saying ATTENTION: SALES MANAGER or MERRY CHRISTMAS! you can do it automatically. And right on the envelope.



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It's true, you still have to lick the stamp.

But we're working on it.

Available for: Apple II,™ Apple III™/III with Profile,™ IBM-PC™/IBM-PC with Tecmar™ hard disk/IBM-PC with Davong™ hard disk.

Continental Software

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Continental Software, 11223 South Hindry Avenue, Los Angeles, California 90045, Telephone (213) 417-8031

Hardware

BOARDS

Prototype Printed Circuit Board

112 A board providing a construction tool for electronic equipment designers to develop plug-in boards. It was designed for IBM service centers, repair centers, and equipment designers and manufacturers. The board has room for up to 88 14-pin or 80 18-pin DIP sockets. All I/O signals are accessible for wire wrapping. *(List Price: $50 in kit form, $55 assembled)*

Hurricane Labs
5140 Moorpark Ave., #105
San Jose, CA 94129
(408) 257-8676

Card Extender

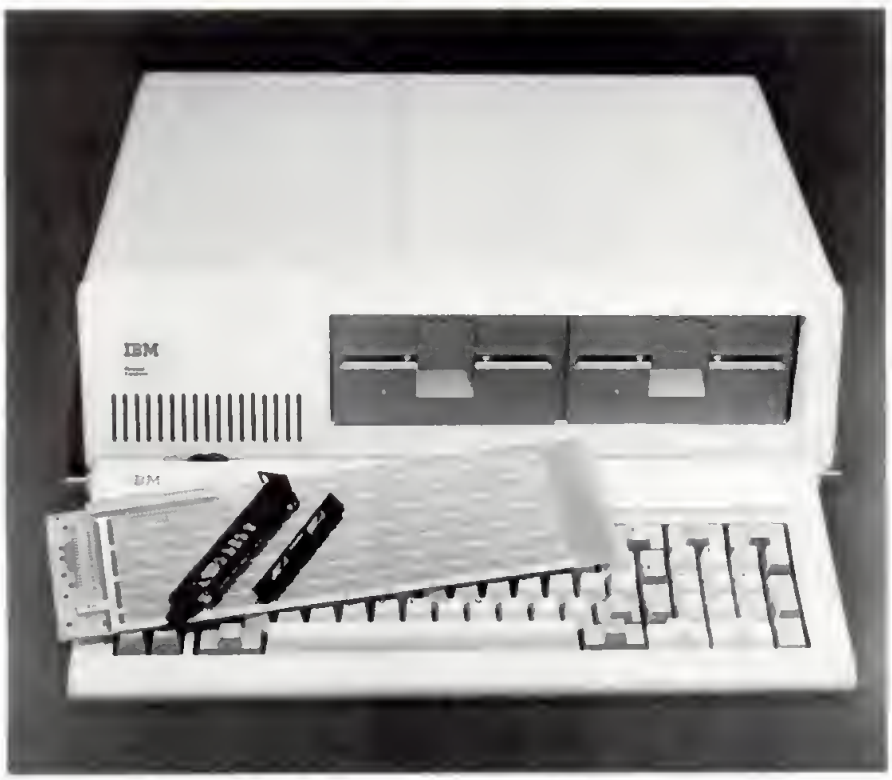
114 A device that raises boards for easy testing and probing. *(List Price: $50)*

Personal Computer Products
1400 Coleman Ave., Ste. C-18
Santa Clara, CA 95050
(408) 988-0164

MM64 Memory Expansion Board

115 User-expandable 64K to 256K byte memory boards that plug directly into the PC. All boards include parity and are supplied with a manual and memory test disk. A snap-in card guide is also included. Five-year warranty. *(List Price: 64K $400, 128K $510, 192K $620, 256K $730)*

Micro Motch
10343 Commerce Ave.
Tujunga, CA 91042
(213) 353-5929



Prototyping and Expansion Board Model 4613, Vector Electronic Co., Inc.

Datamac Memory Expansion Board

113 A board that provides users with four times the amount of memory provided on the PC. Configurations can be set at 64K, 128K, 192K, and 256K bytes. *(List Price: From $449)*

Datamac
Peripheral Products Division
680 Almanor Ave.
Sunnyvale, CA 94086
(408) 735-0323

Memory Boards

116 Memory boards in four separate memory increments: 64K, 128K, 256K and 512K. *(List Price: 64K $189, 128K $289, 256K $499, 512K $799)*

Professional Data Systems, Inc.
2630 Walnut Ave., Ste. H
Tustin, CA 92680
(800) 854-8428, (714) 730-7207
Telex: 18-3511

MM39-1 Extender Boards

117 A board that extends any expansion bus connector up and above the IBM PC unit for testing. Both sides of the extended board are easily accessible for testing. Boards are secured in place with supplied hardware. *(List Price: $45 including manual)*

Micro Motch
10343 Commerce Ave.
Tujunga, CA 91042
(213) 353-5929

PC-Mate Winchester/5 and Winchester/10 Expansion Options

118 Complete hardware and software packages that include an expansion chassis and either a 5MB or 10MB Winchester disk. Included is an expansion chassis with a fan for proper air flow. The software interfaces with either DOS or CP/M-86 operating systems and includes utilities for formatting the disk, performing hardware assurance testing, and providing complete backup and restore of any size files to the floppy disk drives. Additional utilities enhance directory operations and file copy procedures. A disk controller features automatic hardware data error detection and correction. *(List Price: With 5MB disk $2,995, with 10MB disk $3,995)* **Requires:** One disk drive, DOS or CP/M-86.

Tecmar Inc.
23600 Mercantile Rd.
Cleveland, OH 44122
(216) 464-7410
Telex: 241735

Telephone Receptionist Adapter

119 An RS-232 asynchronous communication adapter with programmable features such as baud rate, character formats, error detection, and modem control. An on-board 300/1200 baud modem and DAA unit provide direct modular jack connection to the telephone network. The modem features auto-answer and auto-dial in either touch tone or pulse dial modes, and provides 300 baud full duplex support and half duplex dial-up or full duplex dedicated line support. Audio and control outputs are provided to control a tape recorder motor to enable it to act as a telephone answering machine. A voice synthesis unit is also provided for machine response. *(List Price: $995)*

Automated Business Machines, Inc.
29352 Avocet Ln.
South Laguna, CA 92677
(714) 643-0439

Copyrighted Material

Deluxe Extender Board

120 A board that can be used to assist designers and servica technicians in developing and testing boards. It enables technicians or design engineers to work outsida the IBM chassis for easier access. All eddress, data, and control signals for the IBM I/O channels can be isolated via dip switches. Test points are available for all signals. All switches and test points are above the card caga. *(List Price: $80 in kit form; $120 assembled)*

Hurricone Labs
5140 Moorpark Ave. #105
San Jose, CA 94129
(408) 257-8676

MM77-1 Prototyping Board

121 A prototyping board that can be mounted with up to 105 14-pin or 98 16-pin ICs. ICs on .3-inch, .4-inch, .6-inch, or any separation up to 3 inches will fit. It includes a mounting brackat and card guide. Documentation and layout informatlon are included. An optional 37-pin subminiature D connector can be used to giva access to external signals. *(List Price: $50, 37-pin connector $18)*

Micro Motch
10343 Commerce Ave.
Tujunga, CA 91042
(213) 353-5929

STORAGE DEVICES

SemiDisk

122 A sophisticated disk-emulation system that looks like a disk to tha operating system and offars 512K bytes par board. It is also availabla with 1MB capacity. It can ba used with data base managers, compilers, word processing, and othar disk-intensive software. Sinca thare ara no moving parts, it operates faster than floppy or hard disks and uses less current. Full documentation and source codes are available for custom installations. *(List Price: 512K bytes $1,995, 1MB $2,995)*

SemiDisk Systems
P.O. Box CG
Beaverton, OR 97075
(503) 642-3100

Micro Disc, Amdek Corporation

PMS20, PMS40

123 Two built-in 20 and 40 MB hard disks for the PC. Models PMS20 and PMS40 come with controller card, power supply, and DOS. *(List Price: PMS20 $5,995, PMS40 not available)*

Professionol Micro Systems
4000 MacArthur Blvd. #3000
Newport Beoch, CA 92660
(714) 851-8655
Telex: 182737 HQ NPBH
Source: CL0922

20 Megabyte Hard Disk

124 A 5¼-inch Winchester technology hard disk that is integral to the IBM PC, replacing ona of the two floppy disk drives. The disk supports PC-DOS and CP/M-86. Application software is also available. *(List Price: $5,995)*

Professionol Micra Systems
4000 MocArthur, # 3000
Newport Beach, CA 92660
(714) 851-8655
Telex: 182737 HQ NPBH
Source: CL0922

Hard Disk Subsystem

125 A hard disk memory subsystem that includes a 5¼-inch hard disk drive in 6, 12, or 18MB unformatted capacities. It includes an integral power supply, a PC interface board, and a cable set, and is compatible with CP/M-86 and DOS. *(List Price: $1,899)*

Zobex
7343-J Ronson Rd.
San Diego, CA 92111
(714) 571-6971

Built-In Floppy Disk Drive SFD-51B; External Mini Floppy Drive SFD-51A

126 Both dlsk drives are fast-access, single-sida, doubla-dansity drives featuring SMD stepping and 40 tracks. The external drive is connected to the PC via disk cable. Both are designed for data storage in soft-sector formats and have an unformatted capacity of up to 250K and a track-to-track access time of 5 msec. *(List Price: Built-in $225, externol $265, two externol $445)*
Requires: Disk adapter.

Personol Micro Computers, Inc.
475 Ellis St.
Mountain View, CA 94043
(415) 962-0220

Disk Drives

127 The Tandon single-sided 40-track 100-1 disk drive is compatible with DOS 1.0 and 1.1, while the Tandon 100-2 double-sided drive is compatibla only with DOS 1.1. The PDS 111-5 is compatible with DOS 1.0 and 1.1, and the DPS 211-5 is compatible only with DOS 1.1.

A Tandon 100-4 80-track double-sided drive is also available but requlres a softwara patch. *(List Price: Tandon 100-1 $208, Tandon 100-2 $279, PDS 111-5 $199, PDS 211-5 $259, Tondon 100-4 $399)*

Professionol Dato Systems, Inc.
2630 Walnut Ave., Ste. H
Tustin, CA 92680
(800) 854-8428 (714) 730-7207
Telex: 18-3511

Apple II

Quality Disk Software from SPECTRUM

IBM PC

PERSONAL FINANCE MASTER

The premier personal and small business financial system. Covering all types of accounts including check registers, savings, money market, loan, credit card and other asset or liability accounts, the system has these features:

- Monthly Transaction Reports
- Budgets Income & Expense
- Reconciles to Bank Statements
- Prints Checks & Mailing Labels
- Automatic Year-End Rollover
- Prepares a Net Worth Report
- Searches for Transactions
- Handles Split Transactions
- User-Friendly Data Entry Forms
- Fast Machine Language Routines
- Extensive Error Trapping
- HI-RES Expense/Income Plots

For Apple II (48K) & IBM PC $75.00
Manual & Demo Disk only $15.00

COLOR CALENDAR

Got a busy calendar? Organize it with Color Calendar. Whether it's birthdays, appointments, business meetings or a regular office schedule, this program is the perfect way to schedule your activities. The calendar display is a beautiful **HI-RES** color graphics calendar of the selected month with each scheduled day highlighted in color. Using the daily schedule, you can review any day of the month and schedule an event or activity in any one of 20 time slots.

For Apple II (48K) $30.00

BUSINESS SOFTWARE SERIES

Both Programs $250.00

A user-friendly yet comprehensive double-entry accounting system employing screen-oriented data input forms, extensive error-trapping, data validation and special routines for high speed operation. The series includes these two modules:

GENERAL LEDGER: A complete accounting system with these features:

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- Interactive on-screen transaction journal
- Prints checks and mailing labels.
- Produces these reports:
  - Transactions Journal
  - Account Ledgers
  - Income Statement
  - Balance Sheet
  - Account Listings

For Apple II (48K) & IBM PC $150.00

ACCOUNTS RECEIVABLE

A flexible system with these features

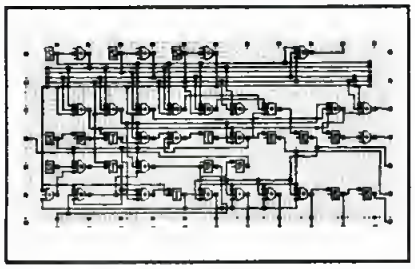
- Up to 500 accounts and up to 500 invoices per diskette.
- Prints invoices, customer statements & address labels.
- Interfaces to General Ledger.
- Interactive screen-based invoice work sheet.
- Produces these reports
  - Aged Receivables
  - Sales Analysis
  - Account Listings
  - Customer Balances

For Apple II (48K) & IBM PC (2 DRIVES) $150.00

LOGIC DESIGNER & SIMULATOR

An interactive **HI-RES** graphics program for designing and simulating digital logic systems. Drawing directly on the screen the user interconnects gates, including **NAND, NOR, INVERTER, EX-OR, T-FLOP, JK-FLOP, D-FLOP, RS-FLOP, USER-DEFINED MACRO** and **N-BIT SHIFT REGISTER** types. Network descriptions for the simulation routines are generated automatically.

The program is capable of simulating the bit-time response of any logic network responding to user-defined source patterns. It will simulate networks of up to 1000 gates. Includes a source pattern editor, **MACRO** editor and network editor. Produces a fan-out report. Simulation output is a string of 1's & 0's representing the state of user selected gates for each bit time of the simulation.
A typical page of a logic drawing looks like this.



For Apple II (48K) & IBM PC (2 DRIVES) $250.00
MANUAL AND DEMO DISK: Instruction Manual and demo disk $30.00

MATHEMATICS SERIES

The Series Includes These 4 Programs:

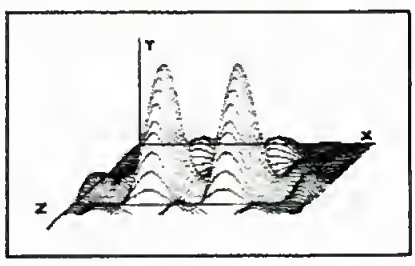
STATISTICAL ANALYSIS I: This menu driven program performs **LINEAR REGRESSION** analysis, determines the mean, standard deviation and plots the frequency distribution of user-supplied data sets.

NUMERICAL ANALYSIS: HI-RES 2-Dimensional plot of any function. Automatic scaling. At your option, the program will plot the function, plot the **INTEGRAL**, plot the **DERIVATIVE**, determine the **ROOTS, MAXIMA, MINIMA** and **INTEGRAL VALUE.**

MATRIX: A general purpose, menu driven program for determining the **INVERSE** and **DETERMINANT** of any matrix, as well as the **SOLUTION** to any set of **SIMULTANEOUS LINEAR EQUATIONS.**

3-D SURFACE PLOTTER: Explore the **ELEGANCE** and **BEAUTY** of **MATHEMATICS** by creating **HI-RES PLOTS** of 3-dimensional surfaces from any 3-variable equation. Disk save and recall routines for plots. Menu driven to vary surface parameters. Hidden line or transparent plotting.

For Apple II & IBM PC $50.00

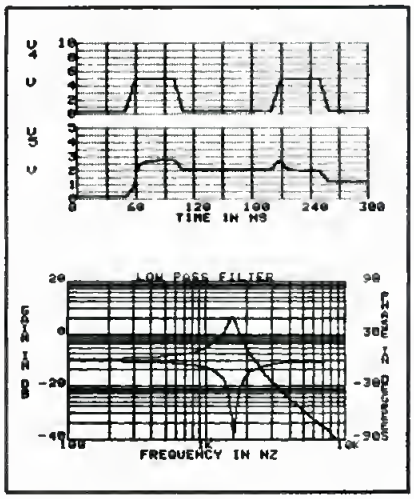


μCAP

Microcomputer Circuit Analysis Program

Tired of trial & error circuit design? Analyze and debug your designs before you build them. With **μCAP** you simply sketch your circuit diagram on the CRT screen and run an **AC, DC** or **TRANSIENT ANALYSIS.** Your circuit may consist of **RESISTORS, CAPACITORS, INDUCTORS, DIODES, BATTERIES, BIPOLAR** or **MOS TRANSISTORS, OPAMPS, TRANSFORMERS,** and **SINUSOIDAL** or **USER-DEFINED TIME DEPENDENT VOLTAGE SOURCES. μCAP** can analyze any such network containing up to 40 separate nodes. Includes a user controlled **MACRO** library for modelling complex components such as **OPAMPS** and **Transistors.**

Typical **μCAP AC** and **Transient Analysis** graphs:



For Apple II (48K) & IBM PC (2 DRIVES) $475.00
Manual & Demo Disk $30.00

ORDERING INSTRUCTIONS: All programs are supplied on disk and run on Apple II (48K) with a Single Disk Drive or IBM PC (64K) with Single Disk Drive unless otherwise noted. Detailed instructions included. Orders shipped within 5 days. Card users include card number. Add $2.00 postage and handling with each order. California residents add 6½% sales tax. Foreign orders add $5.00 postage and handling per product.

SPECTRUM SOFTWARE
690 W. Fremont Ave.
Sunnyvale, CA 94087

FOR PHONE ORDERS:
(408) 738-4387
DEALER INQUIRIES INVITED.

STORAGE DEVICES

CMS 1600 Add-On Disk Drive Subsystem

128 An 8-inch disk drive subsystem that provides 2.4 MB of removable storage on 6-inch floppy disks, while allowing single-density interchange. It uses two Tandon Thinline disk drives that are half the thickness of standard 8-inch disks. The subsystem fits into a 2½-inch-high cabinet on top of the PC and includes low-loss power supply, fan and fan filter, signal cable, AC power cord, and switched AC outlet for a monitor. It may be ordered with optional three-way write protect switches with three-color LEDs (red=write any disk, off=normal write protect tab, green=cannot write). A CMS 1600-IBM/C system including controller and utility software for CPM/86 and PC-DOS is also available. *(List Price: $1,750; $2,095 including controller and driver software)*

Columbia MicroSystems, Inc.
110 N. Tenth St.
Columbia, MO 65201
(314) 875-8900, 443-0255

DSI-501, DSI-514

129 DSI-501 is a 6.4MB (5.2MB-formatted), 5¼-inch disk drive. DSI-514 is a 14.3MB-unformatted (12MB-formatted) capacity 5¼-inch disk drive. Both come with 1-year extended warranties. *(List Price: DSI-501 $1,995, warranty $300; DSI-514 $2,695, warranty $350)*

DAVONG Systems, Inc.
1061 Terro Bello Ave.
Mountain View, CA 94043
(415) 965-7130

Tandon Disk Drives

130 Two models of Tandon disk drives: the TM100-1 for 160K, and the double-sided TM100-2 for 320K bytes. Installation instructions are included. DOS 1.10 supports the double-sided disk drive. *(List Price: TM100-1 $225, TM100-2 $295)*
Requires: Cable, disk drive adapter.

Micro Motch
10343 Commerce Ave.
Tujunga, CA 91042
(213) 353-5929

HDIII

131 A hard disk subsystem that comes in 9.5 and 6.3MB configurations. It includes 115/230 VAC, and 50/60 Hz, and will drive up to four disks. The system also includes chassis, PR, controller, bus adapter, 5¼-inch disk drive, and software. *(List Price: 6.3MB subsystem $2,895, 9.5MB subsystem $3,395, PC adopter and HDIII driver software $249)*

VR Data Corporation
777 Henderson Blvd., Ste. N-6
Folcroft, PA 19032
(800) 345-8102, (215) 461-5300
Telex: 845-124

UP-9705 Universal Mass Storage Subsystem, United Peripherals

Hardware

STORAGE DEVICES

Disk Memory Series

132 Floppy disk systems that include a PC-compatible adapter card and support both 5¼-inch and 8-inch drives. Model CFS640C provides up to 640K internal memory. Model CFS1280C provides up to 1280K internal mamory and includes tha controller and two 80-track disks. The CFE640X and CFE1280X are external disk systems, each with iwo disk drives and a built-in power supply and cable. *(List Price: CFS640C $995, CFS1280C $1,395, CFE640X $895, CFE1280X $1,295)*

CTI, Computer Technology Innovotions
1037 N. Foir Ooks Ave.
Sunnyvole, CA 94086
(408) 245-4256

Disk Attachment System

133 An 8-inch disk attachment system containing an 8-inch Qume DT 8 disk drive including an enclosure, a power supply, a cable, and utilities that run under DOS. Utility programs are provided for formatting, verifying, and copying files between the 8-inch and 5¼-inch disks.

Both single-sided, single-density IBM 3741 or DEC fnrmat and double-sided, double-density IBM S/34 or S/38 format are supported. A 64-point digital input and output attachment card for use in data acquisitions and control applications is also available. *(List Price: Drive ond utility softwore $1,295, cord only, $395)*

Requires: Disk adapter.

Flagstoff Engineering
2820 W. Dorleen
Flogstoff, AZ 86001
(602) 774-3588

Disk Drives, Adapter

134 A single-sided 160K disk drive, 320K double-sided disk drive, and a disk driva adapter. The 320K drive accommodates up to 327,680 characters on a 5¼-inch disk, enabling users to store and update information. The drives are supported by DOS 1.10, CP/M-86, and UCSD p-System, Version IV.0. *(List Price: 160K $450, 320K $650, disk drive udopter $220, IBM Product Center Prices)*

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alasko, Hawoii

5MB Hard Disk

135 Installed in place of the second floppy disk drive, the 5MB capacity Winchester-technology fixed disk comes with a microprocessor-controlled interface adapter. DOS installation softwara is included, and the disk may be configured as one large or several variable-length volumes. Utility software provides for file backup and restoration. One-year warranty. *(List Price: $2,195)*

Automoted Business Mochines, Inc.
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

PC-Bridge

136 A floppy disk subsystem that allows both 5- and 8-inch floppy disks to be intermixed on the PC, allowing access to programs and data available on both disks. Included are two 8-inch double-density, double-sided floppy disks (2.4MB storage), a controller, a power supply, a cable, and a cabinet. It is compatibla with both PC-DOS and CP/M-86.

PC-Bridge also operates in a special streaming mode—data is streamed onto an 8-inch floppy disk in a high-density data format, providing backup to hard disk options (see hard disk subsystems by Tecmar). *(List Price: With 2.4MB hord disk storage $2,995; with 5MB hurd disk $4,995; with 10MB hord disk $5,995)*

Tecmor, Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(218) 464-7410
Telex: 241735

Genie Cartridge Drive

137 A 10MB hard disk drive that includes a 5MB removable cartridge. The cartridge drive system adapter plugs into any slot in the PC and is DOS compatible. *(List Price: $3,495)*

Genie Computer Corporation
18720 Oxnord St. #108
Torzono, CA 91356
(805) 497-1262

SFD-51, Personol Micro Computers, Inc.

T.M.

VOLKSWRITER

a high performance word processor for a high performance machine

The wait is over. Volkswriter, designed especially for the IBM PC, allows you to concentrate on your writing instead of your word processor.

For your personal writing needs, use Volkswriter to prepare correspondence, proposals, studies, manuscripts, articles, and school work. In the office, use Volkswriter for agreements, sales letters, memoranda, reports, newsletters, price lists, schedules, and mailing lists. Volkswriter is unequaled in versatility and simplicity.

For programmers writing in BASIC, PASCAL, and other DOS languages, Volkswriter's full screen editor is unexcelled in speed and flexibility. Volkswriter is the last program editor you will ever need.

Volkswriter is easy to learn. A unique interactive tutorial shows you how to use it. With a reference card and on screen guide to commands, editing and printing functions are explained in step by step detail. For in depth documentation, there is a sturdy reference manual.

Standard equipment on the Volkswriter includes:

- Full screen editor
- Typewriter keyboard layout
- Extensive use of function keys
- On line help
- On screen tutorial
- Reset key for changing your mind
- Automatic word wrap
- Fast insertion and deletion of characters and lines
- Reformat paragraphs
- Rapid scrolling through text
- Move and copy blocks of text with 3 key strokes
- Swap lines with 2 key strokes
- Search or replace any or every occurrence of a word
- Set margin and tabs visually
- Store formats for later recall
- Automatic centering
- Left/right justification

Since Volkswriter files are in 100% standard DOS format, it can be used with VisiCalc™ print files, network transmissions, and BASIC and PASCAL text files.

Volkswriter protects you. You cannot erase data unintentionally. Problem situations are detected and explained in English.

And performance? Whether you have a 64K system with one disk drive, or a 128K system with two floppies and a hard disk, Volkswriter can and will use all your horsepower to drive as fast as you care to go.

...and the best news of all: Volkswriter is priced at $195

TEST WRITE THE VOLKSWRITER TODAY
AT YOUR LOCAL DEALER OR CALL OR WRITE

Dealer inquiries welcome

Volkswriter requires a PC with 64K, one disk drive and DOS. It brings out the best in the IBM, EPSON, and NEC families of Centronics parallel printers.

LIFETREE SOFTWARE, INC.
177 Webster Suite 342
Monterey, California 93940
(408) 659-3221

Volkswriter is a trademark of Lifetree Software, Inc.

VisiCalc is a trademark of Personal Software, Inc.

Hardware

TG-2200 Streoming Tope Cortridge System and TG-1000 Series Hardfiles, *Tollgross Technologies Corporation*

STORAGE DEVICES

Micro Disc

138 A 3-inch micro floppy disk driva with 1MB storaga, two built-in disk drives, and built-in power supply. Tha disk will hold 500K (unformatted) per disk. The plug is compatibla with the PC. Disks will run undar DOS. *(List Price: $899)*

Amdek Corporation
2420 E. Oakton St., Ste. E
Arlington Heights, IL 60005
(312) 364-1180
Telex: 25-4786

MiniMega Series, Sabrina Series Hard Disk Systems

139 A series of 5¼-inch hard disk systems with 5 and 10MB capacities each and the Sabrina SCS-10R removable hard cartridge disk system and 8-inch hard disk subsystam. All systems run under DOS or CP/M-86. Floppy disk backup is available.

Santa Clara Systams offers 33 hard disk subsystems compatible with the PC, ranging from 5 to 120MB capacities and offering ½-1MB floppy backup. The 10MB ramovabla hard disk cartridges ara available on 5¼-inch or 8-inch hard disk drives. *(List Price: 5MB $3,495, 5MB/1MB including floppy disk backup $4,474, 10MB $4,245, 10MB/1MB including floppy disk backup $4,756, 10MB $7,310, 10MB/1MB $10,156)*
Requires: Host adapter.

Santa Clora Systems, Inc.
560 Division St.
Campbell, CA 95008
(408) 374-6972

PACK-HDK

140 A hard disk that provides 5 MB on-line storage. Optional selection is available batween fixed or removabla cartridge drives. Cable and manual are included. *(List Price: $1,795)*

Personal Data Systems, Inc.
1110 Wrigley Way
Milpitas, CA 95035
(408) 262-7880

Add-In Hard Disk and Controller

141 Add-in 6MB, 12MB, or 18MB hard disk systems that includa 8MB, 12MB, or 18MB driva, controller, cable, auxiliary power supply, and software BIOS for DOS. A hard disk controllar (excluding drive) includes cables, an auxiliary power supply, and softwara BIOS for DOS. *(List Price: DD-6 $2,995, DD-12 $3,495, DD-18 $4,195, DC-1 Controller $1,950)*

Datamoc Computer Systems
680 Almanor Ave.
Sunnyvale, CA 94086
(408) 735-0323

Tandon Disk Drive TM100-2

142 A 48 TPI, double-sided, double-density disk drive that is compatible with dual-sided drives supplied by IBM. *(List Price: $400)*
Requires: Disk adapter.

Datomoc Computer Systems
680 Almanor Ave.
Sunnyvale, CA 94086
(408) 735-0323

UP-9705 Universal Mass Storage Subsystem, S1410 Controller

143 A subsystem that provides hard disk data storage in a compact system weighing 18 pounds. The 5¼-inch system provides 5MB of on-line mass storage, has an averaga access time of 170msec, and operates from either 115V or 230V AC power. A series of interchangaable host adapter cards allows the system to work with several diffarent operating systems including DOS. The manufacturer supplies software compatible with tha host computer.

Tha subsystem contains an S1410 single-board, microprocessor-based controller capable of handling two drives simultaneously, and features a standard SASI interface allowing it to operate with any standard host adapter. *(List Price: UP-9705 $2,995 including host adapter, S1410 $295)*

United Peripherals
432 Lakeside Dr.
Sunnyvale, CA 94086
(408) 730-4440
TWX: 910-339-9359

Cyberdrive

144 A hard disk that provides either 13.5 or 27MB disk capaclty in a single cabinet with an integrated mini-cartridga tape for secure data backup. Average seak time is 33 milliseconds, including head sattling. Integrated mini-cartridge tapes used for backup of data can allow for dumping of up to 10MB of data in approximately 10 minutes. Hardwara, read-aftar-write arror checking is incorporated in the tape device. Cyberdrive comes with all hardwara and software to interface with the PC. *(List Price: 13.5 MB version $5,750)*

Cybernetics, Inc.
8041 Newman Ave. #208
Huntington Beoch, CA 92647
(714) 848-1922

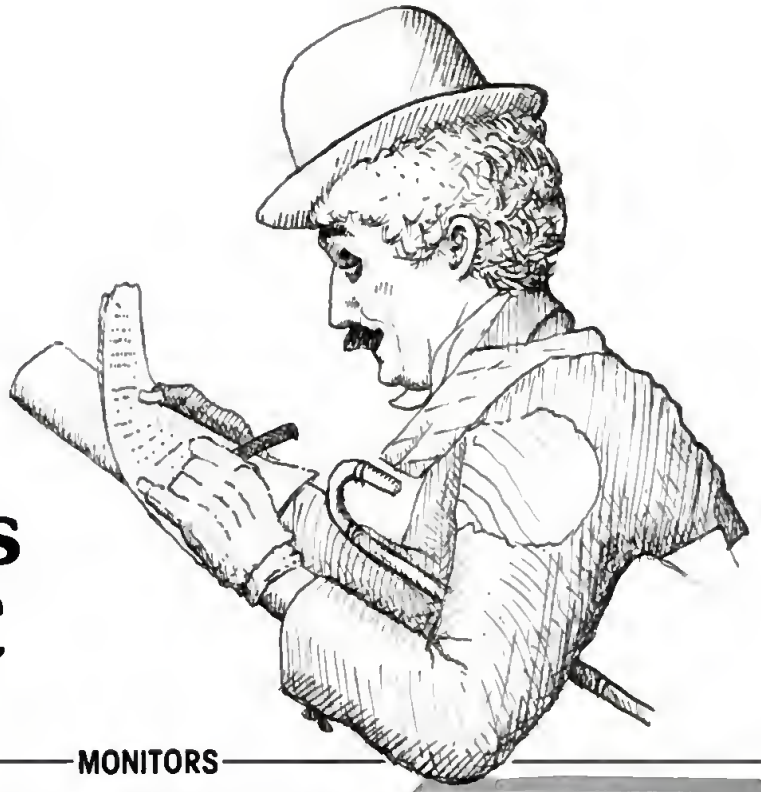
TG-2012

145 A tape backup unit for Tallgrass 1000 series of 8 and 12MB hard disk systems that use ANSI standard DC-300XL cartridges to store up to 12.5MB of formatted data. Once begun, all operatlons take place with no operator intervention. Compatlble software comes with the unit. *(List Price: Model TG-2012, under $1,400; 12.5MB tape cartridges, under $40 each)*

Tallgrass Technologies Corporotion
9207 Cody
P.O. Box 12047
Overland Park, KS 66212
(913) 492-6002

Copyrig... rial

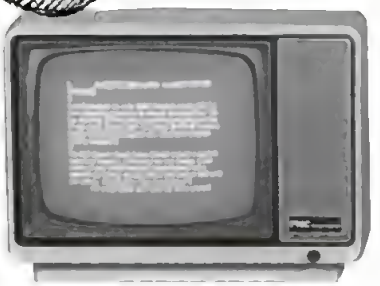
He knows he'll save *a lot* with peripherals from PMC



MONITORS

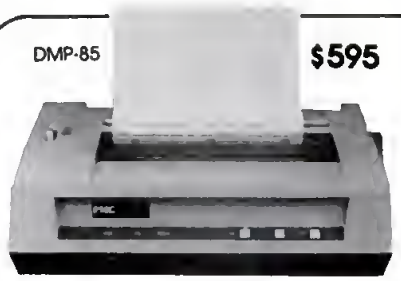
Choose either the VDM-80 that connects to the IBM color CRT interface or the VDM-80M that connects to the monochrome interface. Both are high quality green phosphor screen video monitors with 15MHz bandwidth for 80 characters per line resolution.

$159 - VDM-80
$265 - VDM-80M
plus $5 for cable



PRINTERS

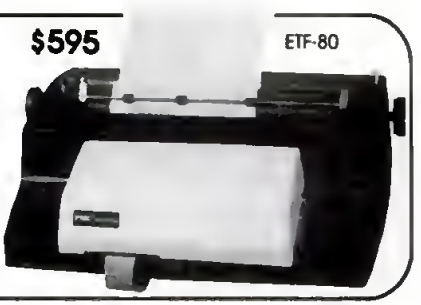
DMP-85 **$595**



Our Dot Matrix Printer, the DMP-85, is 50% faster than the IBM model and significantly lower in cost. It has both tractor and friction feed, 2 proportional fonts, 1.3K buffer and more. CABLE/ADAPTER $54.

Your IBM Selectric becomes an instant letter quality printer with our Electric Typing Fingers (ETF-80). It sits on top of the keyboard and connects to the printer port. No software or typewriter modification is required! CABLE/ADAPTER $54.

$595 ETF-80



DISK DRIVES

The 5¼ inch, single sided, software compatible drives provide 5 msec track access and perform conservatively at the recording density of the IBM operating system. Internal drives connect to IBM's cable and disk interface, while color matched external drives connect to the disk interface via the external connector.

$295 - SFD-51B Internal
$355 - SFD-51A External
plus $45 for external cable/adapter

Call for the name of our dealer nearest you.

Dealer Inquiries Invited

PMC Personal Micro Computers, Inc.
475 Ellis Street, Mountain View, CA 94043 **(415) 962-0220**

Hardware

STORAGE DEVICES

Floppy Drives

146 Single- and dual-sided drives. The drives step at 5 msec per step required for the PC, and are identical to original equipment drives. They are fully configured and tested for the PC. *(List Price: Single-sided $265, double-sided $360)*
Requires: Disk controller board.

Maynard Electronics
P.O. Box 3322
Longwood, FL 32750
(305) 869-8058

Instor/801

147 A floppy disk system that, when used with IBM's asynchronous communications adapter card, will read and write an 8-inch IBM 3741 format disk, which is then compatible with any computer that uses the IBM 3741 format. The INSTOR/801 System consists of an 8-inch flexible disk drive, a microprocessor-based controller, and a firmware package that automatically reads and writes IBM Disk I Basic Date Exchange Format. Features include direct access to data files, transference of PC disk files to standard 8-inch disks and vice versa, disk initialization, and a disk media and hardware condition monitor. *(List Price: $2,000)*
Requires: 48K, one disk drive, asynchronous communications adaptor.

Instor Corporation
175 Jefferson Dr.
Menlo Park, CA 94025
(415) 326-9830
TWX: 910-373-2036

DSK50 Series Hard Disk Drives

148 A series of 5-inch hard disk drives configured in 8 and 12MB unformatted capacities. The 5-inch systems are designed to complement QuCes' existing line of 8-inch floppy and hard disks. They allow for optional installation of floppy disk, streaming tape cartridge, disk cartridge, or any other backup media or associated hardware. The systems include switching power-supply capability, a hard disk drive, and a host adapter card. They also include a formatting program, a hard disk utility, and a real-time clock. Alternate sectors are automatically assigned to any weak sector detected during formatting. One-year warranty. *(List Price: DSK50 Series, 6MB $2,895; 12MB $3,195; 24MB $4,795)*

QuCes, Inc.
178 Main St.
Metuchen, NJ 08840
(800) 631-5944, (201) 548-2135

Percom Hard Disk System

149 A 5¼-inch hard disk system in 5MB and 10MB models, featuring four-drive controller, a design that minimizes operating software overhead, optional floppy drive controller, and RS-232 serial data port. *(List Price: 5MB $2,495, 10MB $2,995)*
Requires: 64K, disk controller card.

Percom Data Company, Inc.
11220 Pagemill Rd.
Dallas, TX 75243
(214) 340-7081

Magnetic Tape Peripherals

150 A series of hardware- and software-compatible magnetic tape peripherals that allow data to be transferred between the PC and other IBM/non-IBM mainframe computers. Tape peripherals provide ANSI, ECMA, IBM, and ISO standards for media interchange.

IDT Modal GPIB-1050 Tape Transport with one board-embedded formetter and a microprocessor controller provides over 40MB of data storage on a standard 10½-inch reel with 2,400 feet of ½-inch tape and can be used for any data storage application including disk backup.

Data is recorded in IBM-compatible 9-track (NRZI) 800 cip or (P.E.) 1,600 cip at 45 ips. A dual-buffer front-end operating ping-pong assures maximum data transfer rate.

A hardware code converter is also available to enable PC users to interchange data with binary, ASCII, or EBCDIC codes. The tape subsystems also feature on-board diagnostics for drives and electronics.

Model GPIB-3000, a digital mass storage subsystem on ¼-inch cartridge reads and writes ANSI, ECMA, and ISO codes using variable and intelligent file structures.

The recorder provides a means of mass storage for approximately 3.35MB of data per movable DC 300 X. cartridge. A built-in microprocessor controller supports three additional slave drives via a dual-buffer front end. Transfer rate between the PC and the GPIB-3000 is 6K bps. Either subsystem comes with a single-slot controller, cabling, documentation, and a driver provided on a 5¼-inch diskette operating from BASIC. *(List Price: $3,750-$8,500 depending on subsystem configuration)*

Innovative Data Technology
4060 Moreno Blvd.
San Diego, CA 92117
(714) 270-3990
TWX: 910-335-1610

Hard Disk III

151 An external Winchester subsystem that includes drives available in 8.3, 9.5, and 19MB capacities. Each chassis is capable of supporting two drives. The subsystem features an automatic power-sensing circuit that allows the hard disk to "sense" an impending power failure while enough power remains to complete the current function. *(List Price: 8.3MB $1,899, 9.5MB $2,099, 19MB $2,799)*
Requires: VR Data Adapter Board.

VR Data Corporation
777 Henderson Blvd., Ste. N-6
Folcroft, PA 19032
(800) 345-8102, (215) 461-5300
Telex: 845-124

TG-2012 Tape Backup. *Tallgross Technologies Corporation*

SFD-51

152 A 5¼-inch single-sided floppy disk drive designed for data storage epplications that require single- or double-density storage in soft sector formets. It has an unformatted capacity of up to 250K bytes and e track-to-track access tima of 5 msec. Two models are evailable. SFD-51A comes with powar supply and features a tan-colored case. SFD-51B is e bare driva with read-write electronics and is designed as "Shugart compatible" for OEM applications and for plug-in drives. *(List Price: SFD-51A $375; SFD-51B $295)*

Personal Micro Computers, Inc.
475 Ellis St.
Mountain View, CA 94043
(415) 962-0220

Dynamic 5M Disk System

153 A hard disk system that uses the manufacturer's Virtual File System (MVFS) software to consume file space only when needed and not when initielized.

The disk system allows for large files of up to 5 or 10MB for data base epplications in DOS end CP/M-86.

The disk system comes with disk controller, power supply, interface card, cabinet, cabling, and softwara. A 1-year warranty is also provided. *(List Price: 5MB $2,695; 10MB $3,395)*

Mountain Computer Inc.
300 El Pueblo Rd.
Scotts Volley, CA 95066
(408) 438-6650
TWX: 910-598-4505

Percom BFD Drives

154 Add-in (internal) and add-on (extarnal) floppy disk drives with either single- or dual-head 40-track mechanisms. External drives are assembled in enclosures and include power supplies. *(List Price: Single-heod drives $399 external, $499 internal; dual-heoded drives $550 external, $650 internal)*

Requires: 18K, IBM disk adapter.

Percom Doto Company, Inc.
11220 Pagemill Rd.
Dallos, TX 75243
(214) 340-7081

Hard Disk Systems

155 An integrated family of 6, 11, and 20MB disk systems. The necessary software and manuals are included. The systems require a Corvus disk intarface providing tha hardware and software to use a Winchester disk. The Winchestar disk systems include a single enclosure with a disk drive, power supply, intelligent controller, and an interface card with a 5-foot cable. Either the 110- or 220-volt model may be specified. *(List Price: $3,195, $4,995, $5,995)*

Corvus Systems
2029 O'Toole Ave.
Son Jose, CA 95131
(408) 946-7700
TWX: 910-338-0226

PMS6R

157 A 6MB removable hard disk subsystam that uses Seagate Technology ST 706 microdisc cartridge drive. The system is integral to the PC, occupying the area usually filled by IBM's minifloppy disk drive. It can back up the PMS20 and PMS40, or permit usage of PMS Application Paks, with Accounting Plus, SuperColc, and WordStor. *(List Price: $1,995)*

Professionol Micro Systems
1422 Industrial Woy
Gordnerville, NV 89410
(702) 782-8105
Telex: 182737 HQ NPBH
Source: CL0922

Cyberdrive, Cybernetics, Inc.

10MB Hard Disk Subsystem

156 A hard disk subsystem that includes the I/ADP adapter card, which can be plugged into the PC's main chassis, a 50-pin ribbon cable, a ST/R controllar, a hard disk drive, and a software packaga for the 5¼-inch floppy disk. It is mounted in a table-top enclosure that includes a disk controllar power supply and a 5¼-inch 10MB hard disk. AC power is selectable 110 VAC, and 220 VAC for 50/60 Hz operation. By removing the cover, the unit will replaca any standard 8-inch floppy, using standard side-mount holes. *(List Price: $3,595)*

XComp
7566 Trode St.
Son Diego, CA 92121
(714) 271-8730
Telex: 182-786

Floppy Disk

158 Tested floppy disks available in soft-box, bulk, or plastic storage cases. *(List Price: $3.50–$5 depending on quontity and pockaging)*

BASF Systems Corporation
Crosby Dr.
Bedford, MA 01730
(800) 343-4600, (617) 271-6608
Telex: 951856 (Domestic)
6817089 (Internotionol)

PC-Share

159 A 5 or 10MB shared hard disk subsystem with expansion slot. Also a daisy-chained access system that enables tha hard disk to be cabled to another PC. It allows up to four systems to share a single disk resource. *(List Price: Hard disk subsystem $2,995, each odditional controller $495)*

Tecmar Inc.
23600 Mercantile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

Hardware

STORAGE DEVICES

TG-1000 (1200, 1400, 1600) Series HardFiles, TG-2200 Streaming Tape Cartridge

160 A family of hard disk and tape backup peripherals. The TG-1000 series HardFiles comes in 8.25, 12.5, 20, and 30MB capacities. Interfacing with tha PC is achiaved by inserting the TG-09 card and using the supplied software disk, allowing users to select the number of directories and directory entries per HardFile. High-dansity backup is offered with the TG-2200 straaming tape cartridge system. Data streaming is used to copy entire surfaces of the HardFile onto individual tape tracks. Transfer to and from tape is done on a per drive basis. *(List Price: TG-1000 6.25MB HardFile $2,995, TG-1200 12.5MB HordFile $3,495, TG-1400 20MB HardFile $3,895, TG-2200 Tope Cartridga Backup System $1,395, 12.5MB Tope Cartridges $40)*

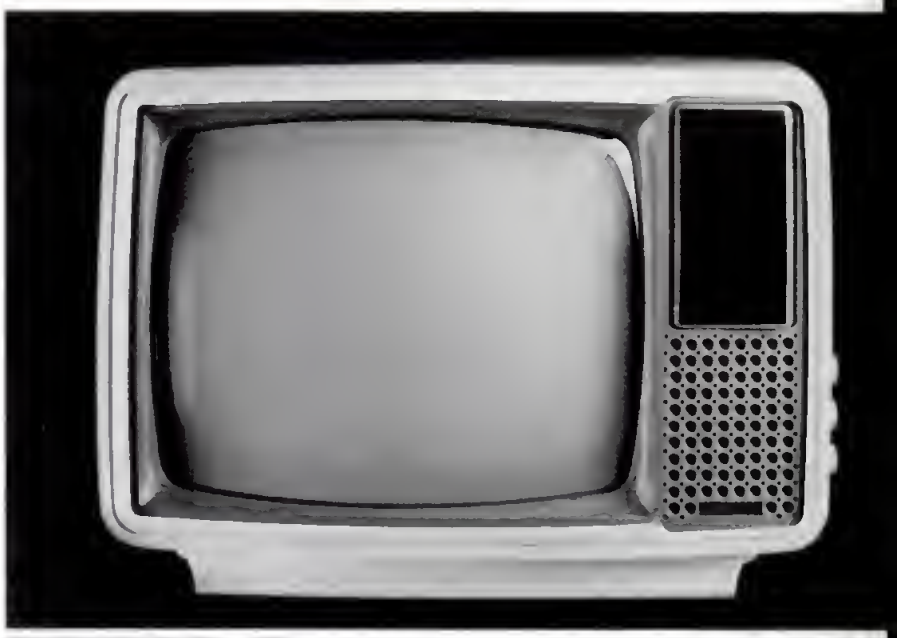
Tollgrass Technologies Corporation
9207 Cody
P.O. Box 12047
Overland Pork, KS 66212
(913) 492-6002

Disk Drives

161 An expanded disk storage system with double-sided drives providing up to 672K of formatted storaga. The disk drives can be installed as internal drives using the IBM cabinet and power supply, or can be added as an external driva with cabla, cabinet, and power supply included as part of tha drive assembly.

Two models are available, and several combinations of internal and external drives can be used to meet storage requirements. The models include a single-sided drive with 168K of formatted storage and a double-sided drive with 336K. Combinations include two double-sided internal drives for 872K of formatted storage, two internal single-sided drives, two single-sided drives or one external double-sided driva, and two internal single-sided drives with an external doubla-sided drive. *(List Price: Internol single-sided drive $470, internol double-sided drive $570, single-sided external drive $570, double-sided external drive $670)*

Interfoce, Inc.
7630 Alabamo Ave. #3
Conogo Pork, CA 91304
(213) 341-7914



***Mean Green**, Leoding Edge Products, Inc.*

Targa Series

162 A line of add-on hard disks for tha PC in 5, 10, and 20MB configurations. Model Targa 5-1 consists of 6.38MB unformatted and 5MB formatted configurations, and is upgradeable to 10MB. Targa 10-1 has 12.8MB unformatted and 10MB formatted storage, and is upgradeabla to 20MB formatted. Targa 10-2 has 20MB formatted and 25.8MB unformatted storage. Each model comes in desk-top dimansions of 15x5¼x13½ lnches, and includas cables, softwara, and interface. *(List Price: 5MB $2,895, 10MB $3,495, 20MB $4,995)*

CMC Internotional
11058 Moin #220
Bellevue, WA 98004
(800) 426-2963, (206) 453-9777

Add-In Hard Disks

163 A line of add-in hard disks for the PC ranging from 8 to 18MB. The compatible DISK-C hard disk controller board comes with cables, auxiliary power supply, and BIOS software for running under DOS. Each system comes with an internally mounted add-in hard disk drive in 8, 12, and 18MB. *(List Price: DISK-8 $1,895, DISK-12 $2,195, DISK-18 $2,695, DISK-C $950; oll prices include controller board, cables, power supply, and softwore)*

PC²
1250 Ookmeod Pkwy.
P.O. Box 678
Sunnyvale, CA 94086
(408) 749-9313

MONITORS

Displays

164 A 13-inch medium-resolution display with 420 pixels x 625 lines resolution. It displays all 18 colors and plugs directly into tha DB-9 sockat with an 8-foot cable. The 19-inch display is high-resolution and is adequata for the full 320 x 200 matrix of the color graphic display board. *(List Price: 13-inch display $639, 19-inch display $745)*
Requires: Color/graphics adapter.

RCB Designs
175 S. Son Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

USI Pi-2 Amber Screen Monitor

165 An ergonomically designed, 80-column by 24-lina video display featuring high resolution and 20 MHz bandwidth. Horizontal resolution of 1,000 lines at the canter of the 12-inch screen gives the monitor graphics capabilities.

Housed in a stackable metal case, the monitor can be connected to the PC by using an RCA phono jack or SO-239 connectors. The monitor is equipped with up-front controls that include an LED power indicator; brightness/contrast, vertical/horizontal hold, and on-off switches. *(List Price: $289)*
Requires: RCA phono jack or SO-239 connectors.

USI Computer Products Division
71 Pork Ln.
Brisbane, CA 94005
(415) 468-4900

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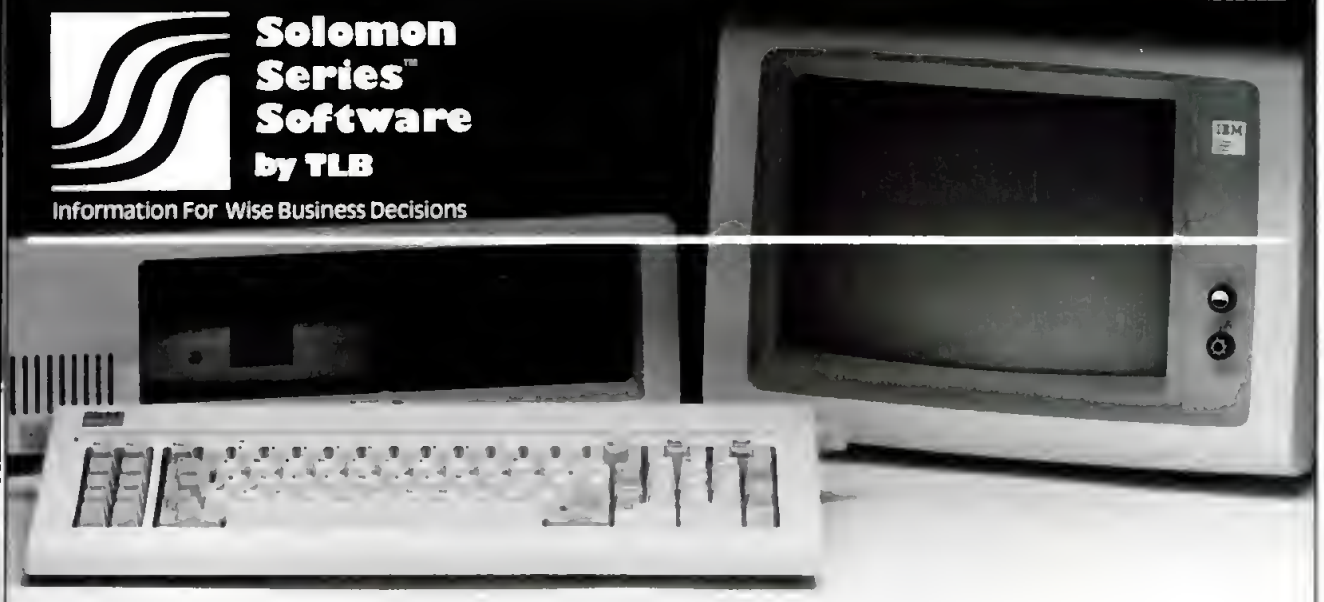

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DataSource System Corporation, Dept. CA, 1660 So. Highway 100, Minneapolis, MN 55416

Hardware

MONITORS

Micro-Verter

166 A monitor designed to interface IBM's video output with color and monochrome TV receivers. It comes with a video cable and an RF output stub coupler, and operates in the UHF band above channel 14 to avoid low-band VHF interferance. Users have a choice of blank channels for operation.

A video gain adjustmant control allows users to obtain optimum picture quality over a range of video levels. Video loop-thru allows users the option of operating a monitor simultaneously with a color TV receiver. It requires no direct connection to antenna terminals under normal conditions. *(List Price: $35, optionol direct-connect, 12-inch antenno cable $1.50)*

Requires: Color/graphics adapter.

ATV Reseorch
13th ond Broodway
Dokoto City, NB 68731
(402) 987-3771

Mean Green

167 A 12-inch CRT with a composite video signal and a display format of 1,920 characters. It comes with a 1-year return and a replacement plan. *(List Price: $99)*

Requires: Color/graphics adapter.

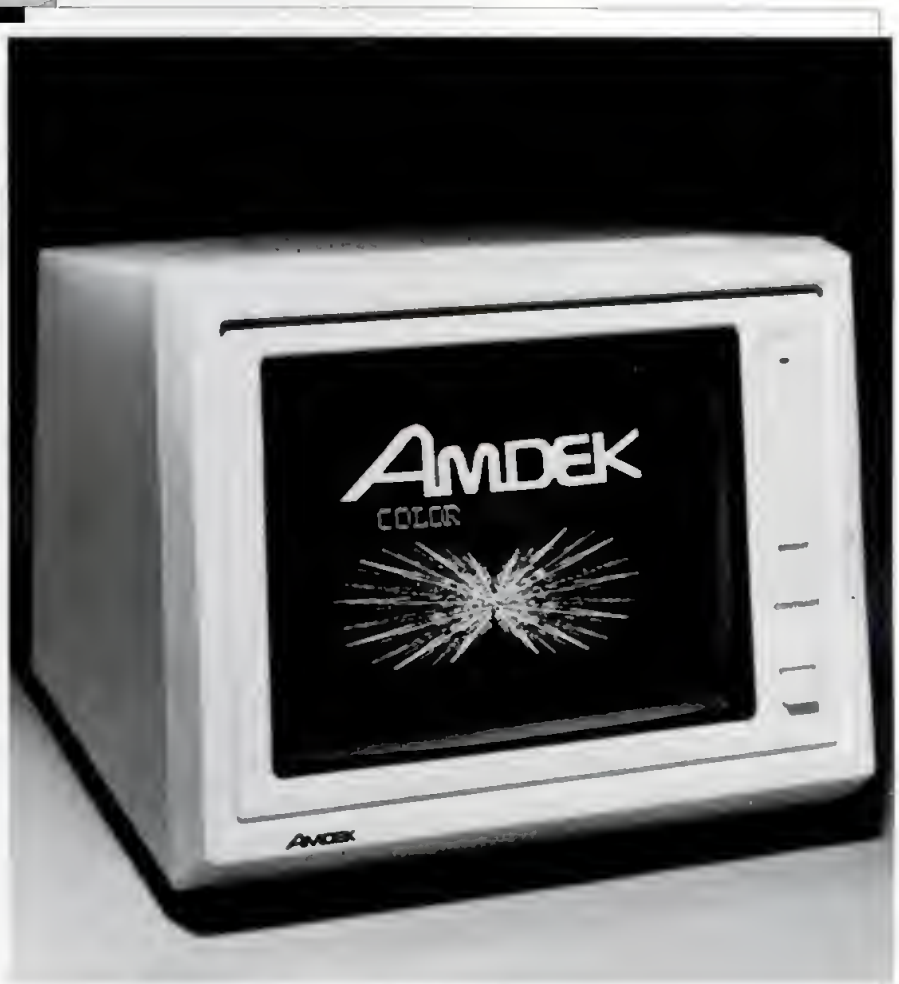
Leading Edge Products, Inc.
225 Turnpike St.
Conton, MA 02021
(800) 343-6833, (617) 828-8150
Telex: 951-624

Monitors with Bezels and Cases

168 A 13-inch medium-resolution or 19-inch high-resolution monitor with the appropriate bezel and case. The 13-inch monitor features 420 pixels x 525/625 lines and a high-contrast black stripe tube. The 19-inch monitor features 640 pixels x 525/625 lines, a high-contrast black stripe tube, and will display 80 characters text in addition to color graphics. The cases include louvers for ventilation and fit the minimum envelope for RGB CRTs. Bezels come in black and metallic grey. *(List Price: 13-inch monitor $359, 19-inch monitor $389, cased 13-inch monitor $679, 19-inch $779, 13-inch bezels $17.75, 19-inch $24.95, 13-inch cases $125, 19-inch $150)*

Requires: Cable sold by manufacturer.

RCB Designs
175 S. Son Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246



Color IV Monitor, Amdek Corporation

High-Resolution Color Monitor

169 A 13-inch RGB-type, 24 MHz band width with a maximum resolution of 1,024 x 720. The unit has 16-color TTL input and Mitsubishi CRT with an IBM PC interface. *(List Price: $1,500)*

Control Systems
2855 Anthony Ln.
Minneopolis, MN 55418
(612) 789-2421

Video Display Monitor Vdm-80

170 A composite-signal, high-resolution green display that features 15 MHz baud width and 40 or 80 columns. *(List Price: $129)*

Personol Micro Computers, Inc.
475 Ellis St.
Mountoin View, CA 94043
(415) 962-0220

Monochrome Display

171 A high-resolution monitor that provides 25 lines of 80 characters each; upper- and lowercase; an anti-glare, green phosphor screen with contrast and brightness controls; and 256 different characters. Text character size is 7 x 9 within a 9 x 14 box. Highlighting choices include underlining, blinking, reverse image, and high-intensity. *(List Price: $335, IBM Product Center prices.)*

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alosko, Howoii

Hardware

MONITORS

Color Monitors IIA, III, IV, Video-300 Monochrome Monitor

172 A line of color, graen phosphor, and black and white video monitors. The 13-inch Color-IIA monitor features RGB video input. The 13-inch commercial grade CRT monitor offers high-resolution graphics display with RGB video input. The green or amber phosphor Video-300 monochrome monitor has an 18MHz band width video response, and the Color-IV is an RGB analog input color monitor. One-year warranty on parts and labor; 2-year warranty on the CRT. Includes IBM cable. *(List Price: Color-IIA $999, Color-III $569, Color-IV $1,290, Video-300 $199)*

Amdek Corporotion
2420 E. Ookton St. Ste. E
Arlington Heights, IL 60005
(312) 364-1180
Telex: 25-4786

CR-M-13, CR-M-19 Color Monitors

173 Two 13- and 19-inch, high-resolution color video monitors featuring direct RGB analog or digital color drive input and CRT display. Features includa 80 characters and the ability to display an unlimited number of colors. *(List Price: CR-M-13 $899, CR-M-19 $875)*
Requires: RGB drive or National Television Standards Corporation standards.

Algol Technology, Inc.
303-3 Convention Way
Redwood City, CA 94063
(415) 368-3566
TWX: 910-378-5205

USI Pi-1, Pi-2, Pi-3

174 Three video monitors. Models Pi-1 and Pi-2 are available with 9-inch and 12-inch grean phosphor screens respectively. Both have 1,000 lines at centar resolution and are plug- and design-compatible with the PC. The display area is 80 characters by 24 lines. The Pi-3 is available in a 12-inch amber screan with a horizontal resoiution at centar of 1,000 lines. The display area is 80 characters by 24 lines and is compatible with the PC. *(List Price: Pi-1 $225, Pi-2 $249, Pi-3 $275)*

USI Internotionol
71 Pork Ln.
Brisbane, CA 94005
(415) 468-4900

TM-12, TM-12GX, RGB Color

175 Three color monitors and accessories. The TM-12 black and white monitor features 800 lines at center resolution with 15MHz video response. The TM-12GX green phosphor screen features 1,220 lines at center resolution and greater than 15MHz video response. The RGB color monitor features horizontal resolution of 360 dots with a vertical resolution of 230 lines. Video response is 8MHz. An accessories package includes the Mod-Card for 16 colors and an inter-connect cable. *(List Price: TM-12 $139, TM-12GX $179, RGB color $599.)*
Requires: Not availabia.

Dato Electronic Devices, Inc.
18 Bridge St.
Solem, NH 03079
(603) 893-2047
TWX: 710-366-0502

Sony RGB Color Monitor

176 A television receiver that combines with RGB/video input. This 12-inch, compact Trinitron receiver provides high-performanca color graphics as well as quality TV viewing. *(List Price: Not ovoilable)*
Requires: Color/graphics board.

Tokyo Electronics Corp.
222 Kearny St. #310
Son Froncisco, CA 94108
(415) 398-6884

PRINTERS / PLOTTERS / TYPEWRITER INTERFACES

Model 5060, 5061 Interface

177 A typewriter interface that allows users to changa their IBM models 50, 60, and 75 electric typewriters into printers or terminals without modifying tha typewriter. *(List Price: Model 5060 $399, Model 5061 $478)*
Requires: RS-232-C intarface.

Colifornio Micro Computer
9323 Worbler Ave.
Fountain Valley, CA 92708
(714) 968-0890

IBM Model 50, 60, 75 Interface

178 An interface that allows electronic typewriters to be used as letter quality printers. The interface can be installed by users or a company dealer. *(List Price: $695 if installed by dealer, $595 if installed by user)*
Requires: RS-232-C interfaca.

Network Dato Systems of Flo., Inc.
1500 N.W. 62nd St. #410
Fort Lauderdole, FL 33309
(305) 772-9320

AJ Daisy Wheel Printer

179 A printer designed for personal computer users and small businesses. It features 30 cps latter quality printing, changeable typefaces, and a full ASCII keyboard with numeric pad. It also has high-resolution X-Y plotting, completa alectronic forms control, and e 128-character buffer. Optional features include a forms tractor, a pin-feed platen, paper trays, side shelves, extra print wheels, an APL keyboard and a 2K buffer. Print wheal, ribbon cartridge and cable are included with purchase price. *(List Price: Not ovoilable)*
Requires: RS-232 intarfaca.

Anderson Jacobson
521 Chorcot Dr.
Son Jose, CA 95131
(408) 946-2900

HIPLOT DMP Series: 2-7

180 Digital plotters for creating charts, graphs, and drawings. Different models permit choice of plot size, speed, intelligence, minimum/maximum controls, self-testing functions, horizontal or vertical operation, types of hold-downs, kinds of interfacing, and selection of resolution. It is suitable for novice to sophisticated users. *(List Price: Single pen $1,850–$2,185, six-pen $1,480–$1,880, eight-pen $2,180–$2,680)*
Requires: Serial or paraliel interface.

Houston Instrument
One Houston Square
Austin, TX 78753
(512) 835-0900
TWX: 910-874-2022

Olivetti DY 211 Daisy Wheel

181 A microprocessor-controiled bidirectional printer with optional automatic single-sheet feed. The printer faatures 20 cps print speed and shortest path saeking. Users have a choice of dual plastic 100-charactar print wheels in four pitches and 12 ianguages. A choice of ribbon cartridges and paper handling capabilities is also available.

Print options include normal, underscore, and bold print; horizontal tabulation; superscript; and subscript. Paper handling features include standard friction feed, optional automatic singla-sheet feeder, and bidirectional tractor faed. *(List Price: Printer $1,745, sheet feeder $605)*
Requires: Parallal interface.

Bosic Systems Corp.
230 W. Florence Ave.
Inglewood, CA 90301
(213) 673-4300

SP830 Daisy Wheel Printer

182 A daisy wheel printer with impact-typa and bidirectional printing. Print wheels are 127- or 96-character plastic/metallic wheels. The print speed is a maximum 60 cps with an avarage 70 cps. Character sets are 127 characters and 96 characters. The print line is 345.4mm (13.6 inches) with 136 columns at 10 cpi or 163 columns at 12 cpi. Line spacing is 0.3mm (1/96 inch) per increment with column spacing at 0.2mm (1.120 inch) per increment. Forms-feed speed is 127mm (5 inches) par second with a carriege return speed of 400 msec for 136 columns. Tabulation is vertical end horizontal.

The printer can produce a maximum of six copies including the original, and can handle 101.6 to 406.4mm (4 to 16 inches) wide forms up to a maximum of 0.7mm (0.03 inches thick).
Requires: Hytype II (standard), Sprint 5, RS-232-C (CCITT V-24), (DC Current Loop 20 or 60mA optional).

Fujitsu Limited
2945 Oakmead Villoge Ct.
Santo Clara, CA 95051
(408) 727-4300

Envision Color Printer

183 A color printer that offars letter quality text and high-resolution graphics. A multicartridge ribbon and carriage control system allows up to four separate ribbons to be used, permitting flexibility in selecting ribbon color or type. It includes a high-speed, 16-wire dot matrix printhead. Print speed is 100 cps. The printar switches between multiple fonts that are stored in firmware or downloaded from the host computer. All fonts support seven languages. *(List Price: $3,950)*
Requires: Standard printer parallel interface.

ENVISION Corporation
663 River Oaks Pkwy.
San Jose, CA 95134
(408) 946-9755

Microprism Dot Matrix Printer

184 A printer that combines the speed and graphics capabilities of a dot matrix printer with print quality similar to a daisy wheel. The printing technique is called MAISEY. Printer features include dot-plot graphics, seriel RS-232 and Centronics-compatible parallel interface, automatic lina buffering with 1,400 bytes standard, 75 cps in correspondence quality, and 110 cps in high-speed data mode. *(List Price: $799)*
Requires: Parallel or serial interface.

Integral Data Systems, Inc.
Milford, NH 03055
(800) 258-1386, (603) 673-9100
Telex: 953-032

WP-6000, Anodex

Typ@Printer 221

185 An electronic typewritar that can be connected to the PC to become a letter quality printer. When connected to a modem it can become a stand-alone terminal without the aid of a computer or a separate CRT display. The typewriter features changeable daisy wheels with over 40 type styles available at extra cost. Keyboard functions can be controlled by computar with two-latter mnemonics preceded by two @ signs. Commands can ba inserted into most software programs and text.

Other features include storaga in non-volatile memory of up to ten most-used phrases, formats, and forms. Tha printar has a correctable carbon ribbon, and can print in four pitches of 10, 12, 15, and proportional spacing. It can handle paper up to 17 inches wide. Printer can also print in regular, underline, bold, bold underline and reverse type print. The printer can be utilizad to access Telex and TWX networks through message conversion companies. Other options are also available. *(List Price: $2,850)*
Requires: Parallel interface. Cables provided with printer. Modem and serial interfece needed to access Talex and TWX.

Rogers Products Company, Inc.
249-B East Emerson Ave.
Orange, CA 92665
(714) 974-6302

Office-Writer

186 An Adlar-Royal 1010 electric typewritar that connects to an OMNI Board RS-232 or IBM asynchronous communications adapter. It features a daisy wheel print mechanism and a built-in RS-232 adapter module, and will output copy at 18 cps. *(List Price: Office-Writer $1,195, printer odopter $165)*
Requires: Serial interface.

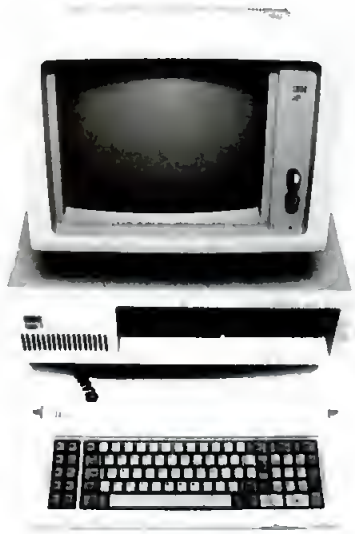
Automoted Business Mochines, Inc.
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

PG 1000

187 A color graphic ink-jat printar that utilizes the manufacturer's drop-on-demand color ink-jet technology and provides color hard copy. A pixel-addressable, high-resolution model, the color printer comes complete with ink, paper, interface cable, and disk version RAM driver, allowing users to print anything created on the screen. *(List Price: $4,995 including cables, interfoce, ond disk drive)*
Requires: Centronics parallel interface.

PrintaColor Corporation
P.O. Box 52
Norcross, GA 30091
(404) 446-2675

If your IBM monitor draws a blank when you want it to draw graphics



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Hercules Computer Technology
160 Beechnut Drive
Hercules, CA 94547.

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Hardware

PRINTERS/PLOTTERS/TYPEWRITER INTERFACES

DS180

188 An enhanced version of the menufacturer's previous DS180. Enhancements include dot-eddressable, raster-scan graphics to produce computer-generated charts, meps, end graphs at e resolution of 75 x 72 dots per inch.

A varieble horizontai pitch seiection eilows printing et 10, 12, or 16.5 cpi plus double-wide printing at 5, 6, or 8.25 cpi. The expended 2K FIFO print buffer handles e full CRT screen dump at up to 9600 baud without deleying the host system. A transparent mode is offered for isoleting communications problems. For APL users e duei ASCII/APL cheracter set option is eveiieble.

Other feetures include 180 cps print speed, bidirectionel/logic seeking, expandeble 1,000-character buffer, nonvolatile format retention, and 110-9600 beud communications.

The printer can run on either a parallel interface off the standard parallel card with e special ceble configuration or on e parallel interfece. *(List Price: $1,595)*
Requires: Not evaiiebie.

Dotasouth Computer Corporation
P.O. Box 230947
Chorlotte, NC 28224
(800) 438-5050, (704) 523-8500

Olive-80 and Olive-1

189 Olive-80 is a portable, deisy wheel printer thet offers both typewriter mode end printer mode in conjunction with en Olive-1 interfece. It is designed to ellow for future functionel enhencements. Typewriter mode supports eil the features of the Olivetti Praxis 30 eiectronic typewriter, including 10-cheracter correction memory. Printer mode expands to full word processing program with use of eppropriete softwere. Olive-1 is a seriel communicetions interfece used with the Olive-80 printer that is designed for functional enhencements via upgraded CPU cards under development. It delivers text to the Olive-80's Praxis typewriter as repidly as it cen be printed end supports the stenderd herdwere hendshake mechanism, either vie CTS or DTR. Two softwere communication protocols—ETX/ACK and XON/XOFF—can be handled. *(List Price: $749)*
Requires: Seriel interfece, Olive-1 interfece.

The Olive Branch Association, Ltd.
1426 W. Winton Ave.
Hayword, CA 94545
(415) 887-4716

HR-1

190 A microprocessor-based printer with cassette-type daisy wheel end ribbon. The printer features three different charecter-per-line rates, 132 cheracters (1/10-inch), 158 cherecters (1/12-inch), end 198 characters (1/15-inch). It handles 16.5-inch papar width end hes 2 inches per second papar feed speed. The carriege motion is bidirectionel. *(List Price: Not available)*
Requires: RS-232-C or Centronics parallel interface.

Brother Industries, Ltd.
c/o Konemotsu-Gosho
333 S. Hope St. #2800
Los Angeles, CA 90071
(213) 626-1123

Model 700

192 A typographic printer that prints dreft copy at high speed or final versions in multiple typefeces. Mechanicel perts ere common with the Dieblo 630 deisy wheel printer. Six different type styles or sizes cen be installed in the printer, which eiso has plug-in slots for four edditionel draft/finish sets. The printer can be set by switches for common computer interfeces. *(List Price: $3,360)*

Sanders Technology
P.O. Box 1226
Nashuo, NH 03061
(603) 882-1000

Model ETF-80, Recortec, Inc.

Diablo Model 630 RO Communications Terminal

191 A printer that operates et switch-selectable transmission speeds of 110, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 7200, and 9600 baud. Informetion is transmitted and received asynchronously over leased or diel-up telephone lines or through direct connection to the host. The interfece is compatible with the Bell 103A end 212A modems or their equivelents.

Feetures inciude printer electronics, HPR05 printed circuit boerds, power supply, friction pleten, RS-232-C interfece cable, operator controi panel, end RO cover. *(List Price: Not available)*
Requires: RS-232-C interface.

Diablo Systems Incorporoted
P.O. Box 5003
Hayward, CA 94545
(415) 786-5000

MPI Dot Addressable Graphics Printers MPI99G, MPI150, and MPI 88G

193 Three printers that have dot eddressable grephics es standard features. The printers elso feeture nine-wire printheeds except model 88G, which has e seven-wire printheed; 7x9 matrix 11x9 correspondence font; 1K print buffer trector end friction feed; parellel end serial interfaces. Optionel feetures include e single-sheet feeder, e QT sound shield, 2K buffer expenson, IBM interfece cebie IBM, AP-PAK. *(List Price: MPI 99G $849, MPI 88G $749, MPI 150 $1,095, options from $25-$55)*

Micra Peripherals, Inc.
4426 South Century Drive
Solt Lake City, Utoh 84107
(801) 263-3081

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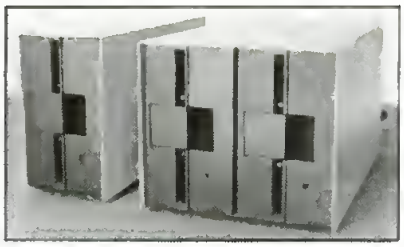

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ComputerLand/Madison 608/273-2020

Canada
Computer Mart/Windsor 519/966-5757

Hardware

PRINTERS/PLOTTERS/
TYPEWRITER
INTERFACES

DMP-85 Dot Matrix Printer

194 A 9xN dot matrix printer with correspondence quality print. Standard features includa rear mounted internal tractor and friction paper feed, forward and reverse line fead, print speed of 120 cps, proportional type font, 1.3K buffer, high-resolution graphic character set, and bit image graphics. Up to 136 columns per line. Pitches include 5, 8, 8.5, 10, 12, 17 cpi. *(List Price: $595)*

Requires: Parallel interface.

Personol Micro Computers, Inc.
475 Ellis St.
Mountoin View, CA 94043
(415) 962-0220

ETF-80 Electric Typing Fingers Interface

195 A peripheral that turns an IBM Selectric or similar typewriter into a letter quality printer. The unit is placed on top of the typewriter keyboard and plugged into the parallel printer port. The unit supports both upper- and lowercase letters, numbers, and common symbols. Speed of the unit is switch selectable to 10 cps or 12 cps. A cable/adapter for the IBM PC is availaible. *(List Price: $595)*

Requires: IBM Selectric or similar typewriter, parallel interface.

Personol Micro Computers, Inc.
475 Ellis St.
Mountoin View, CA 94043
(415) 962-0220

Interface for Olivetti Praxis 30

196 A microprocessor-controlled interface for the Olivetti Praxis 30 electronic typewriter for letter quality printing. Printing styles are changeable by snapping in new daisy wheels. Letter spacing is selectable with a choice of 10, 12, or 15 cpi.

Other printer features include 7-bit ASCII Centronics-compatible parallel input and underlining by carriage return without line feed or by backspace. All hardware is internal and removable by unplugging. The print speed ranges from 8 to 12 cps. A self-test program is built in. *(List Price: $795)*

Requires: Parallel interface.

B&S Computech
975 Forest Ave.
Lakewood, NJ 08701
(201) 364-3005

80 CPS Matrix Printer

197 A bidirectional printer that can print lines of up to 132 characters at up to 80 cps. Twelve character styles are availiable. It features a bidirectional 9x9 character matrix and weighs 12.5 pounds. *(List Price: $555, IBM Product Center prices)*

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois,
447-0890 Alosko, Howoii

Color III Monitor, Amdek Corporotion

Quantex Model 7030 Multi-Mode Matrix Printer

198 A printer that stores up to 40 letter quality end other resident fonts on line without requiring a change of print elements. It inciudes standard word processing fonts of Couriar, Trend, or optional Emphasis, Cubic Italic, and Script for specialized applications. Users can also choose OCR-A, APL, and sciantific fonts.

it can be utilized as a data processing printer and prints bidirectionally at either 180 or 150 cps, using character sets for USA, UK, Germany, France, Norway/Denmark, Sweden, Finland, and Spain.

Other standard features include 4.7K buffer, bottom and front paper feed, line drawing graphics at 150 cps and 180 cps. *(List Price: $1,995)*

Requires: RS-232 or Cantronics parallal interfaca.

Quontex
60 Plant Ave.
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(516) 582-6060
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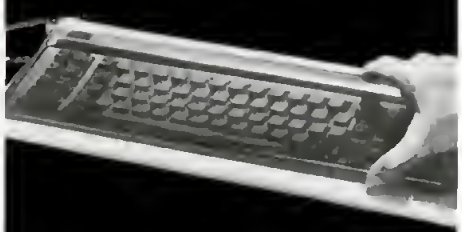

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Hardware

PRINTERS/PLOTTERS/ TYPEWRITER INTERFACES

M 78-5 Trim Form

199 A dot matrix printer that has a built-in cutter that trims printed forms to specified sizes so odd-shaped items can be prepared easily. This versatile printer also produces e variety of type styles, including the special type for optical character readers, bar codes, and large lettering that can be three, five, or seven times normal character size. The TrimForm prints at speeds up to 200 cps, depending on the style and size of type reproduced. *(List Price: $4,345)*
Requires: Print controller, serial interface; may require special cable (contact dealer or manufacturer).

Monnesmonn Tolly
8301 S. 180th St.
Kent, WA 98031
(206) 251-5524

SpinWriter 3550

200 A letter quality, 35 cps plug-compatible printer for business applications and word and data processing. The forms handlar accommodates several ranges of paper and document sizes and types. The handlers allow users to print out forms needed for date processing, word processing, graphics accounting, or other business applications. More than 50 print thimbles are available in both constant-pitch and proportional-spaced fonts, plus foreign lenguage, technical, and scientific versions. Tha print thimbles allow users to print up to 203 columns on 16-inch paper. Software-invoked features include automatic proportional spacing, bidirectional bold and shadow printing, justification, and centering, underscoring, and sub/superscripting at speeds up to 350 wpm. *(List Price: $2,250)*
Requires: Centronics parallel interface.

NEC Informotion Systems, Inc.
5 Militio Dr.
Lexington, MA 02173
(617) 863-5720

SuperCord

201 An interface that allows an electronic typewriter to be used as a letter quality printer. Currently works with Smith-Corona Typetronic and Ultra Sonic, Brother EM-1 and EM-2, Adler 1010 and 1030, Royal 5010 and 5030, Silver Reed EX55, Hermes Toptronic, and the Facit 8000. The electronic typewriters need no modification. The printing features, quality, and speed depend on the typewriter and software used, but it generally prints at approximately 12 cps. *(List Price: $395 without typewriter)*
Requires: Parallel interface.

Cord Limited
1548 Brookhollow Dr.
Sonto Ano, CA 92705
(714) 545-1643

32K Printer Buffer

202 A 32K printer buffar that provides a means for hardware spooling with the PC and is availabla in both serial and parallel output. *(List Price: Not avoilable)*

MICROBYTE/ASAP
1198 E. Willow St.
Signol Hill, CA 90806
(800) 421-7701
(213) 595-6431 Colifornio
Telex: (814) 656 491 (ETYB LGB)

External Textformatting Interface

203 A microprocessor-based intelligent peripheral controller that can access all six fonts of the Centronics 737 or 739 lrom any word processor, providing low-cost typesetting capabilities. It features right-margin justification, multicolumn two-color printing, tabbing, and centering between user-defined margins. *(List Price: From $147, with grophics ond two-color printing $157)*
Requires: Centronics 737 or 739 printer.

Microdome Corporation
45 Broadwoy
Denville, NJ 07834
(201) 627-8554

Model DXY Four-Color Plotter

204 An X-Y coordinate plotter that has a 10-inch by 14-inch effective plotting range, and includes four pans, pan holders, and chart hold-downs. Functions may be expanded by additional ROM. *(List Price: $949)*
Requires: Parallel interface.

Amdek Corp.
2420 E. Ookton St., Ste. E
Arlington Heights, IL 60005
(312) 364-1180
Telex: 25-4786

Olivetti Interface

205 An interlace lor Olivetti ET 221 and 121 typewriters. ET 221 features a two-line buffer, nonvolatile permanent memory 1K phrases, and paga formats. Automatic right margin justification, paper feed, page end, and underscore are included.

ET 121 features an interchangeable daisy wheel printing element; one-line memory for automatic correction; one-line buffer; Pica, Elite, and Mikron pitches; automatic centering; decimal alignment; carrier return; right margin alignment; and paragraph indent. *(List Price: ET 121 with RS-232 interfoce $495, Centronics porallel interfoce $995; ET 221 with RS-232 interfoce $199, Centronics interfoce $1,300; instollotion extro)*
Requires: Not available.

Business Systems Solutions, Inc.
2579 Merced St.
Son Leandro, CA 94577
(415) 351-3991

Starwriter F-10 Daisy Wheel Printer

206 A 40 cps printer featuring 1/120-inch character spacing with static print impact and 1/48-line spacing. It is an industry-standard, 96-character whael with 40 msec line feed time, a return time of 900 msec, and features 136, 163, and variable-number printable columns.

A download option allows word processing expansion commands to provide proportionai spacing and special character wheal selection. The printer is compatible with the X-ON, X-OFF, and ETX/ACK interlaces. *(List Price: $1,995)*
Requires: Parallel or RS-232-C interface.

Leoding Edge Products, Inc.
225 Turnpike St.
Conton, MA 02021
(800) 343-6833, (617) 828-8150
Telex: 951-624

Model ETF-80

207 An interface lor IBM Selectric or similar typewriters that provides letter quality printing. The typewriter requires no modification and no soltware to use the ETF-80. It prints approximately 10 cps and uses all standard typewriter characters. Automatic lina leed on carriage return is switch selectable. *(List Price: $495 including PIF-40 cable)*
Requires: Centronics parallel interfaca.

Recortec, Inc.
475 Ellis St.
Mountoin View, CA 94043
(415) 962-0220

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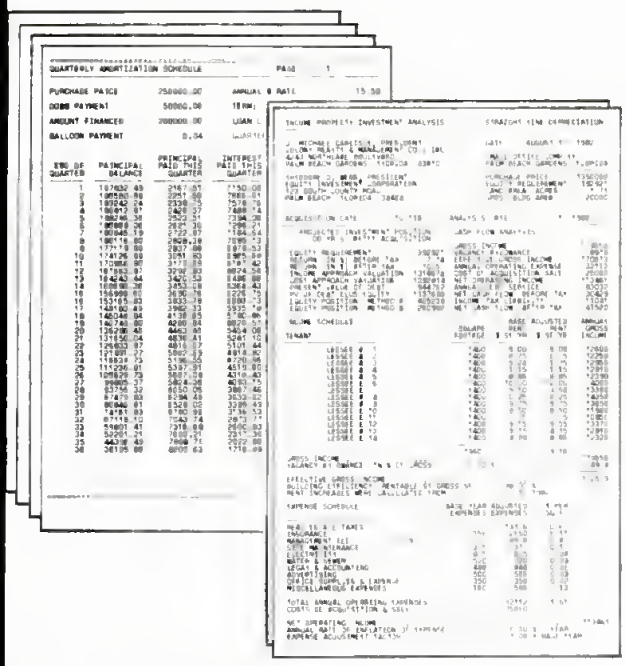

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Hardware

PRINTERS/PLOTTERS/ TYPEWRITER INTERFACES

Centronics Model 739

208 A printer that produces correspondenca for text and data processing plus graphics designed to meet tha needs of small business system users. Model 739 is an addition to tha lina of small business computer printers. Standard features include pin-addressable graphics with 74 dots per inch horizontal resolution by 72 dots per inch vertical resolution, a monospaced print spaed of 100 cps, and an acoustlcal top cover for improved single-sheet paper loading. It can print 7 x 8 dot matrix characters with true underline at 10 and 16.5 cpi for data processing and can generate Nx9 dot matrix proportional charactars with true descenders for text editing applications. Additional faatures includa a standard 2K buffar and a software-controlled top of form end self-test capability. *(List Price: $695)*

Requires: Centronics parellel or serial interface.

Centronics Dato Computer Corp.
Hudson, NH 03051
(603) 883-0111
TWX: 710-228-6505
Telex: 94-3404

Centronics Model 122

209 A 120 cps desk-top printer designed for data processing and business processing applications. Tha printar provides standard industrial features such as 132 columns end pin-addressable graphlcs for business processing or dasign graphics applications. Usars can select standard alphanumeric printing and pln-addressable graphics but also have e choice of 6- or 8-pin graphics.

Flexibility makes the Model 122 software compatibla with the Centronics Model 739, giving users a broad base of readily availabla software packages to perform epplicatione such as trend enalysis, buslness graphics, ple charts, bar codes, and CAD/CAM draft plots. Other features include bidirectional/logic seeking printing in monospaced alphenumeric mode and unidirectional logic-seeking printing in graphics mode. *(List Price: Not avoilable)*

Requires: RS-232 or Cantronics parallel interfaca with 2K buffer.

Centronics Dato Computer Corp.
Hudson, NH 03051
(603) 883-0111
TWX: 710-228-6505
Telex: 94-3404

Transaction Document Printer

210 A printer of forms of up to five parts that allows tear-off within 1 inch of top of form. It is suitable for invoica printing, inventory control, hotel menegement, wholesale/retail distribution, end any business application that needs multipart forms capability. Standard features include compressed print, 150 cps bidirectional logic-seeking printing, clean hends ribbon cassette, and variable-forms length control. *(List Price: Not avoilable)*

Requires: Parallel lntarfaca.

Centronics Dato Computer Corp.
Hudson, NH 03051
(603) 883-0111
TWX: 710-228-6505
Telex: 94-3404

WP-6000

211 A single-pass printer with multiple operational modes and speed ranges that provides letter quality, correspondanca quality, draft quality, data processing, and graphics printing for the office environment. Lettar quality printing of 10-pitch, 12-pltch, or proportional spacing can be produced at 150 to 180 cps for word processing. Speeds of 250 and 330 cps are obtained in a correspondence quality mode with 10- end 12-pitch, and proportlonal spacing. In both modes character fonts include Serifa, Halvetica, and a complete scientlfic set. Each of these is supported in both columnar and proportlonal printing, subscripts, superscripts, simultaneous underlining, as well as double-wida and italic characters. Pitch and charecter font changes can be produced within the same line. Other character sets can be added and user-developed character sets can be downloaded from the computer.

The printer provides left, right, end full justification and can centar in both single- and double-column formats in the letter quality and correspondance quality modes. Horizontal and vertical tabs are each supported with 16 settabla positions. Line spacing selection is 8, 8, 12, end 18 llnes per inch.

Graphics can be printed at aither of two rasolutions: 72 x 72 and 144 x 144 dots per lnch. Graphics generation is provided by a dot-addressable tachnique. A combination of the letter quallty and graphics modes allows users to produce letters containing a company logo, text, and e computer-printed, "hand-writtan" signature through e high-resolution dot matrix printhead. Tha printar can amulate the Diablo 630. *(List Price: $3,250)*

Requires: Cantronics parallal or RS-232 intarface; Pin 38 on printer must ba nullified to connect the PC.

Anodex
9825 DeSoto Ave.
Chotsworth, CA 91311
(213) 998-8010
TWX: 910-494-2761

Smartbuffer

212 A printer buffer that accepts data from the computar at computer speed, stores the data in its own memory, and then spools the data to the printer or plotter at the slower printar speed. Smartbuffer is preprogrammed for offica use and users can program a variety of protocols and conversions including serial to parallel. The buffer includes 18K and can be upgraded to as much as 128K. *(List Price: From $325)*

Requires: Printer.

MicroCompotible
151 6th St. #129
P.O. Box 7624
Atlanto, GA 30357
(404) 874-8368

iPex ELF Interfoce Unit, iPEX International, Inc.

Hardware

PRINTERS/PLOTTERS/ TYPEWRITER INTERFACES

Printstation 350 Series

213 Industrial grade matrix printers designed for data processing, word processing, and business processing applications. Standard features include paper handling flexibility to accommodate cut-sheet, fanfold, and immediate tear-off demand-document forms. The printers are designed as universal machines, and they include resident character sets. For international usage, 110- or 220-volt operation is provided together with switchable serial/parallel interfaces. Additional standard features include pin-addressable graphics, 200 cps print speed, self-test/diagnostics, and bidirectional logic-seeking printing.

Based on a bus interface architecture, the Model 350 includes all standard features and can be customized by OEMs to suit user needs. Model 352 is designed for 200 cps date processing quality printing and combines all Model 350 features plus a basic communications formatter with a host of switch-selectable electronic functions.

Model 353 is a full-featured, multifunction unit with the ability to perform high-resolution printing by utilizing a multipass capability at 50 cps for word processing applications in addition to the 200 cps data processing mode. *(List Price: Model 352 $1,795, Model 353 $2,495)*

Requires: Serial or parallel interface.

Centronics Data Computer Corp.
Hudson, NH 03051
(603) 883-0111
TWX: 710-228-6505
Telex: 94-3404

Centronics Model 152

214 A 132-column desk-top printer designed for business and communications applications. It complements the 80-column Model 150. Standard features include 150 cps print speed bidirectional logic-seeking printing, adjustable tractors, clean hands ribbon cassette, and top of form compressed print that allows 132 columns to be printed in an 8-inch print line or 216 columns in a 13.2-inch print line. Additional features include a self-test, a five-part forms capability, and a visual paper-empty indicator.

A character set modification guide is available for OEMs to modify or create personalized character sets on Model 152 and Model 150. *(List Price: Not available)*

Requires: RS-232 or Centronics parallel interface.

Centronics Data Computer Corp.
Hudson, NH 03051
(603) 883-0111
TWX: 710-228-6505
Telex: 94-3404

iPEX ELF Interface Unit

215 An interface that allows several IBM typewriters to be used as letter quality printers. Print speed ranges from 150-192 words per minute; no modifications to the typewriter are required; installation does not alter the typewriter's appearance. Cables are available for direct connection to the parallel printer port or RS-232-C asynchronous adaptor. Typewriters remain eligible for IBM warranty service. *(List Price: $495-$660 depending on model and options)*

Requires: IBM Selectric I, II, III, or IBM Electronic Typewriter Model 50, 60, or 75.

iPEX International, Inc.
5115 Douglas Fir Rd.
Calabasas, CA 91302
(213) 710-1444
TWX: 910-494-2100

Color II-A Video Monitor, Amdek Corporation

Centronics Model 150

216 A desk-top printer designed for business and communications applications, available for volume delivery to qualified original equipment manufacturers. The printer is the latest addition to Centronics' full line of printers and offers three-way paper handling, top of form compressed print, adjustable snap-on tractors, and a roll paper holder. Optional features include 150 cps print speed, bidirectional logic-seeking printing, clean hands ribbon cassette, forward tear bar, a self-test, and a visual paper-empty indicator. *(List Price: Not available)*

Requires: RS-232 or Centronics parallel interface.

Centronics Data Computer Corp.
Hudson, NH 03051
(603) 883-0111
TWX: 710-228-6505
Telex: 94-3404

Color Conversion for Model 739 Graphics Printer

217 A color conversion kit for the Model 739 graphics printer that provides the ability to print in both black and red. Model 739 produces correspondence printing for text and/or data processing plus pin-addressable graphics that allow Modal 739 to be used with many available graphics packages. The kit was designed for applications such as business graphics, financial and statistical analysis, sales trends, and scientific functions. It can also aid small-business system users in conducting presentations. The kit is user installable and comes with a Centronics red and black ribbon, Model 739 firmware, and a color shifter mechanism. *(List Price: $75)*

Requires: Model 739 graphics printer.

Centronics Data Computer Corp.
Hudson, NH 03051
(603) 883-0111
TWX: 710-228-6505
Telex: 94-3404

Model MP150 Printer

218 A metrix printer that forms characters bidirectionelly in a logic-seeking mode to optimize system throughput. Nine ballistically driven print wires form characters with true descenders and underlining capability. Users have a choice of a full 136-character line at 10 cpi, or up to 226 columns may be printed by using 12 cpi or 17 cpi density.

The printer allows full 136-column printouts to be condensed to fit on standard 8.5-inch-wide paper. Double-wide characters can be software selected in any of the character densities to give a total of six different cpi densities. A 7x9 matrix font is used for high-speed data printing while an 11x9 serif-style matrix font is used for applications requiring correspondence printouts. A standard 96-character ASCII set with three additional strap-selectable foreign fonts is standard in each unit. Special fonts may be either down-line loaded into memory or permanantly located in ROM.

A Centronics-type interface can accept parallel TTL level data at a transfer rate in excess of 1,000 cps using either a Strobe/Ack or a Strobe/Busy handshake. An optional RS-232-C serial interface can be added and will accept data at any one of seven strapable baud rates up to 9,600. The printer can also be interfaced to devices with an IEEE-to-Centronics interface adapter card. *(List Price: $1,095)*

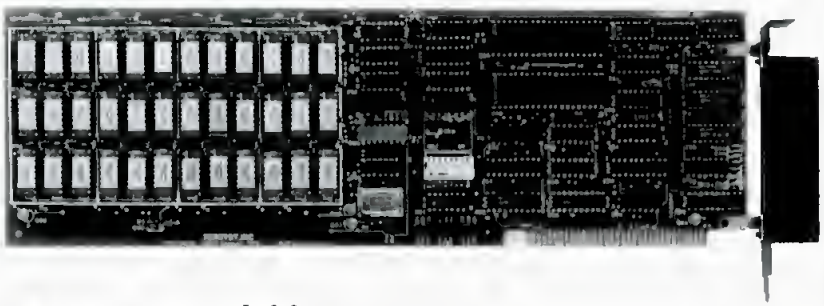
Requires: Parallel interface.

Micro Peripherals, Inc.
4426 S. Century Dr.
Salt Lake City, UT 84107
(801) 263-3081

PERSYST

FOR THE IBM® PERSONAL COMPUTER

IBM



SPECTRUM Multifunction Board

FOUR FUNCTIONS INDEPENDENTLY UPGRADEABLE

Memory Expandable RAM

- Expandable from 64 to 256K Bytes
- Parity generate and check
- Base address switch-selectable for any 64K boundary
- No wait states

Expandable Parallel Printer Port

- Supports Centronix, Data Products or IDS interface
- Switch selection of printer port I/O address
- Selectable Interrupt level
- Adjustable flat cable clamp (strain relief)

Two Expandable Asynchronous Communication Ports

- Single or Dual Channel, RS 232-C
- DCE/DTE selectable
- 3 wire interface support
- Full modern support
- Programmable Baud rates from 50 to 19,200
- Selectable Interrupt levels
- Programmable character length, stop bits and parity
- Single line configuration addressable as COMM 1 or COMM 2

PERSONAL SYSTEMS TECHNOLOGY, INC.

22957 LA CADENA LAGUNA HILLS, CA. 92653 (714) 859-8871

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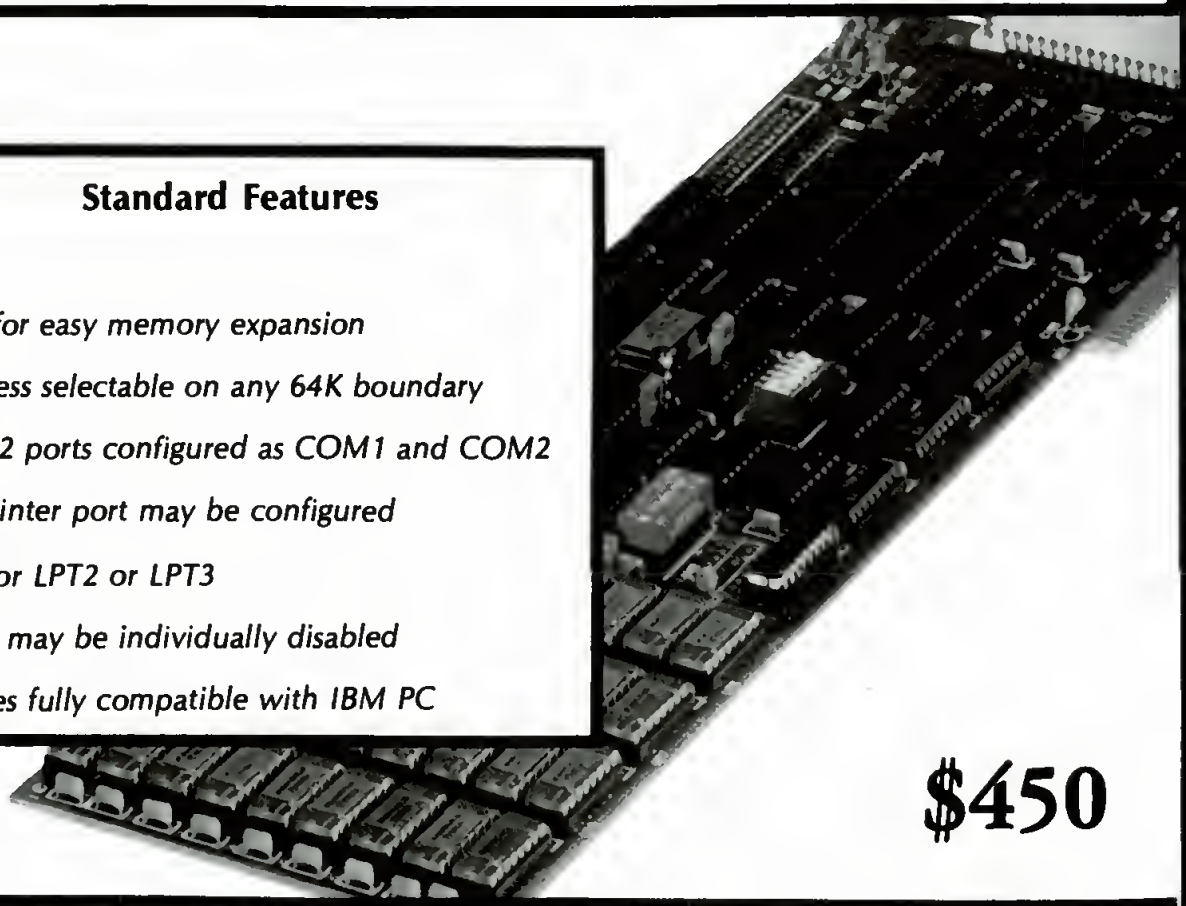
MULTIFUNCTION RAM BOARD

For IBM Personal Computer

64K, 128K, 192K, or 256K Bytes With Parity



Standard Features

64 KB

Socketed for easy memory expansion

Base address selectable on any 64K boundary

Two RS232 ports configured as COM1 and COM2

Parallel printer port may be configured as LPT1 or LPT2 or LPT3

Each port may be individually disabled

All features fully compatible with IBM PC

$450

EVERYTHING FOR THE PC

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- **Disk Drives:**
  - Single Sided [160 kb] **$239.00**
  - Double Sided [320 kb] **$305.00**
- **RAM Expansion Packages for**
  - Mother Board [16 kb] **$25.00**
  - Memory Expansion Board [64 kb] **$130.00**
- **Printers [NEC, EPSON, OKIDATA] . . . . . $CALL**
- **Monitors [NEC, TEKO, AMDEK] . . . . . $CALL**
- **Diskettes [3M** single sided / double sided **] . . . . . $CALL**
- **Extension Cables for:**
  - Printer . . . . . **$CALL**
  - Monitor [two cable set] . . . . . **$CALL**
  - Keyboard . . . . . **$CALL**

SOFTWARE

- **Condor DBMS**
- **Ed-Word® Screen Editor/Word Processor**
- **NECPRINT [NEC 8023AC print utility]**

More hardware and software coming. Call for details.

AEGIS SYSTEMS

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Terms FOB Saline **Michigan [313] 429-2**

Hardware

PRINTERS/PLOTTERS/TYPEWRITER INTERFACES

Parallel Print Spooler, Serial Print Spooler

219 The parallel print spoolar is a printer interface card that can buffer up to 64,000 characters of printar output. It is fully software compatibla and can be used anywhere en IBM parallel printer edapter can be used. No software patches ara required.

The serial print spooler is similar to the parallel print spooler but is designed to work with most serial printers, buffering up to 40 minutes of output at 30 cps. It is compatible with all standard software. The board appears as a parallel interfaca to the PC, so no softwere changes ere necessary. *(List Price: Parallel print spooler $349, serial print spooler $349)*

Genie Computer Corporation
18720 Oxnord St. #108
Torzano, CA 91356
(805) 497-1262

Mediamix ETI²

220 An interface that converts any IBM electric typewriter into a printar compatible with the PC and its software. It is available in eithar a Centronics-type parallel model or an RS-232-C model.

The interface provides access to tha typewriter's automated functions including underlining, cantering, end tabbing. Users may mix features of their word processing programs, the ETI², and the IBM typewriter into a word processing system. They mey access these printing effects in sny program.

An optional module for the ETI² adds typesetting capability to the IBM ET 50. Users can create and print an entire newsletter using the PC, the ETI², end en IBM ET 50. *(List Price: Centronics Parallel $495, RS-232-C $595)*

Requires: IBM electric typewriter, serial or parallel interface.

Mediomix
P.O. Box 67B57
Los Angeles, CA 90067
(213) 475-9949

MODEMS

Models 103J-L, 103J-M, 212A

221 Models 103J-L and 103J-M stand-alone modems feature full duplex, asynchronous communication rates of up to 300 baud. These are originate and answer modems, FSK modulated with an EIA RS-232-C interfaca. Both modems feature local analog loopback and visual indicators for status indication. An alternate voice/date option is available. Model 103J-M has an auto-answer option.

Models 103J-L and 103J-M are compatible with Bell modams 102, 112, and 212A, are FCC certified, and have direct access to the DDD network. Model 212A is compatible with the Bell modam 212A only. Tha 212A comes as a stand-alone or e rack-mount.

Data rates are full duplex, asynchronous, or synchronous at up to 300 or 1200 baud. All three modems come with a 1-year warranty. *(List Price: Models 103J-L, 103J-M $199 each; Model 212A stand-alone model $820; rack-mount model $725)*

Requires: Serial interface.

General DataComm Industries, Inc.
One Kennedy Ave.
Danbury, CT 06810
(203) 797-0711

UDS 103LP O/A

222 A modem that provides for 300 baud diel-up communication with customers, suppliers, or anyone else with compatible equipment. Tha unit will automatically switch from RS-232 to TTY interfaca. A front panel switch provides for conventional phone set-up. *(List Price: $195)*

Requires: Serial interface.

Universal Dato Systems
5000 Brodford Dr.
Huntsville, AL 35805
(205) 837-8100
TWX: 810-726-2100

Modem Plus II

223 A modem that interfaces between the PC bus and any direct connect dial-up telephone line. The 1200 baud board is 202S-compatible and includes auto-dial, auto-answer capabilities, and a buffer for controlling data. *(List Price: $595; OEM ond quontity discounts available)*

Requires: Serial interface.

Integroted Design Engineering, Inc.
P.O. Box 16307
St. Louis, MO 63125
(314) 343-0005

Model 212LP Modem

224 An addition to tha Model 212LP modem. Powered from telephone lines, the manual answar unit requires no external AC power, yet offers full duplex 1200 baud asynchronous operation. Designed for desk-top applications, the modem is FCC certified for direct connection to the dial-up network and is compatible with the 1200 baud asynchronous channel of the Western Electric 212A. *(List Price: $495)*

Requires: Serial interface.

Universal Data Systems
5000 Brodford Dr.
Huntsville, AL 35805
(205) 837-8100
TWX: 810-726-2100

Microconnection

225 A direct-connect modem that eutomatically dials and answers othar computers. It monitors incoming lines, runs printers, decodes busses, and transcribes incoming data. *(List Price: $224.95)*

Requires: Asynchronous communications adepter.

The Microperipherol Corporation
2643 151st Pl. N.E.
Redmond, WA 98052
(206) 881-7544

Model MP150 Printer, Micro Peripherals, Inc.

Hardware

MODEMS

212A Data Modem

226 A microprocessor-based modem providing full duplex operation on two-wire PSTN networks with 0 to 300 baud asynchronous data or with 1200 baud asynchronous mode. It will accept 9-, 10-, and 11-bit charactars including start and stop bits.

This modem is 103 or 113 series-compatible in the 0 to 300 baud mode and 212A-compatible in the 1200 baud mode. Tha called modam adapts to the spaed of tha originating station. Manual call origination is permitted by connecting the TELCO jack at the rear of the modem to the registered data jack and plugging the telephone into the TELSET jack, then manually dialing the number. Automatic answer capability is elso incorporated into the units.

Front panel controls allow the user to implement tests at either of two speeds of operation, 0 to 300 or 1200 baud. A built-in ebort timer disconnects the modem from the line whan the absence of carriar is detected. Automatic disconnect is accomplished via a loss of carrier, e steady space signal, or by the terminal dropping Data Terminal Ready (DTR). Call disconnect can elso be accomplished automaticelly or manually with the telephone handset or via tha TALK button. The UDS 212A can operate with the UDS 801 series Automatic Calling Units. *(List Price: $695)*

Requires: Serial interface.

Universal Data Systems
5000 Bradford Dr.
Huntsville, AL 35805
(205) 837-8100
TWX: 810-726-2100

Model 1012 Modem

227 A microprocessor-based 1200/300 baud modem featuring full Ball 212A/103 compatibility and the manufacturer's patant-pendlng keyboard dialing. The modem is a 1200-baud version of tha manufacturer's Model 1022 Intelligent Modem and the Hayes Smartmodem.

Applications includa remote data stations, store-and-forward electronic mail, computer-computer file transfers, and automatic polling of unattended locations. An integral, serial autodialar allows for keyboard dialing. The built-in microprocessor provides a full complement of commands for controlling dialing, auto-answer, self-testing, and programming modem parameters.

Front panel controls have bean argonomically designed for nontechnical office personnel. The modem is fully FCC registered for direct connection. *(List Price: $995; reference monuol only, $9.95)*

Requires: Serial interface.

Bizcomp
P.O. Box 7498
Menlo Pork, CA 94025
(415) 966-1545

Hayes Stack Smartmodem

228 An auto-answer, auto-dial data communications system with touch-tone or pulse dialing and direct connection. The Smartmodem is program controlled by any language through ASCII character strings. A series of software commands and eight configuration switches change operating parameters. The Smartmodem oparates in full or half duplex up to 300 baud.

LED indicators on the front panel provide a visual check of the modem's status, and a speaker allows users to monitor call progress. The Smartmodem also features automatic baud rate parity sense and word size detection. Two-year limited werranty. *(List Price: $279)*

Requires: Serial interface.

Hoyes Microcomputer Products, Inc.
5835 Peochtree Corners East
Norcross, GA 30092
(404) 449-8791

MISCELLANEOUS

IBM Cable

229 A special cable for direct interface between the IBM PC and the I.D.S. Prism Printer. *(List Price: $49.95)*

Requires: I.D.S. Prism Printer.

K & M Associates
418 Austin
Downers Grove, IL 60515

Microbuffer

230 A line of printer interface cards that provide the ability to print end process data simultaneously. Several cards are available depending on buffer size desired and type of printer used. Microbuffer interface cards support the Epson MX-80, MS-80 F/T, or MX-100 printers, in either parallel or serial modes, and with either 8K or 16K. Both serial and perallal versions are expandable up to 256K. Tha serial stand-elone will support different I/O baud rates and handshake protocol.*(List Price: Not available)*

Practical Peripherals, Inc.
31245 La Bayo Dr.
Westloke Village, CA 91362
(213) 991-8200

Printer Cable

231 A cable designed to connect a parallel printer such as the IBM or Epson MX-80 to the IBM PC. *(List Price: $35)*

Requires: Parallel intarface.

Austin Computer Technologies
P.O. Box 26595
Austin, TX 78755
(512) 835-6136

Game I/O Adapter

232 A game adaptar that intarfaces with most paddle and graphics systems, and features analog control via e 16-pin connectar. It allows the user to plug in two sets of paddles. *(List Price: $40)*

Requires: 48K, ona disk drive, IBM game adapter.

Softwore Masters
6704 Hoover Rd.
Indionopolis, IN 46260
(317) 259-7892

***Model DXY 4-Color Plotter**, Amdek Corp.*

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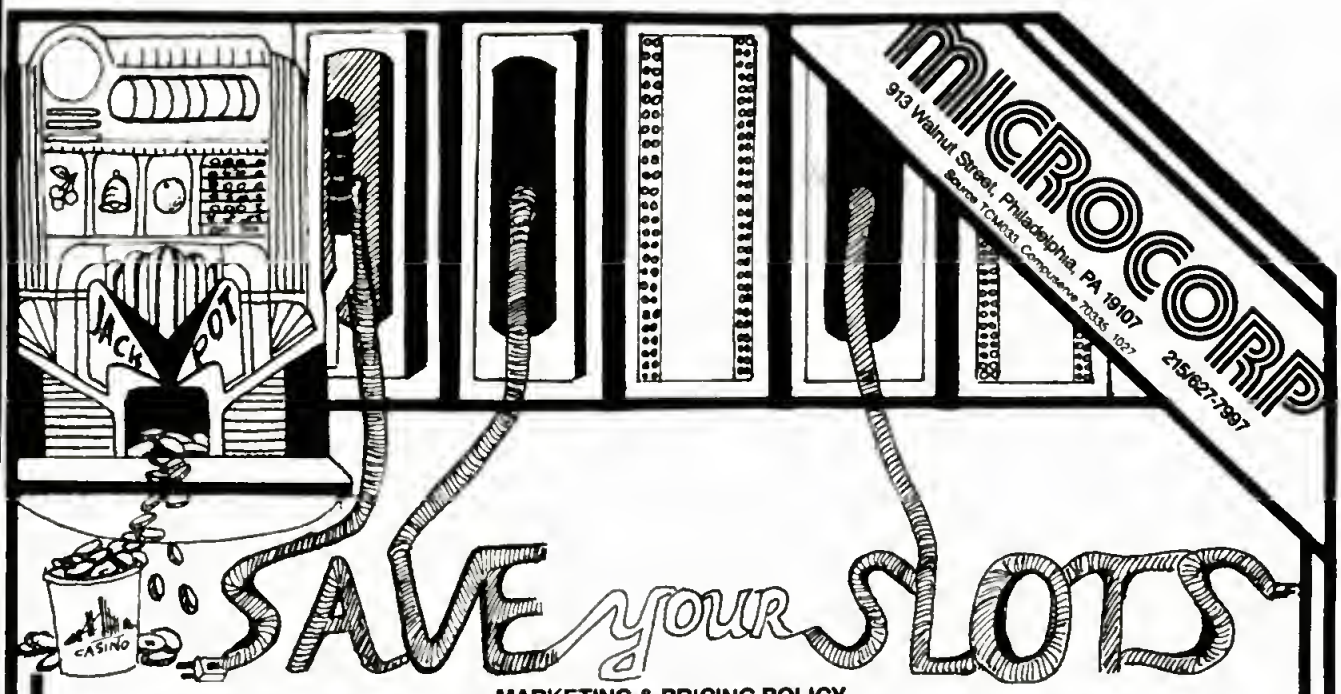

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MicroCorp markets all hardware and software from IBM and most major independent vendors, specializing in software-intensive products. **MicroCorp** provides high-level technical support, including machine communications, and provides any necessary additions and corrections to most software products at no additional cost. **MicroCorp** will match any advertised (unsupported) price for any product on a comparable basis. Here are some new products:

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1. **SEATTLE RAM +**—more free slots. Available in 64K to 256K. Plus RS-232 Port for communications. All on one board occupying one slot. Includes Flash-Disk software to turn your Seattle board into a virtual disk. (See Below) PLUS $100 credit from **MicroCorp** for each IBM Communications board sent with order . . . $475.

2. **QUADRAM QUADBOARD**—64K to 256K Memory, Parallel Printer Interface, Communications and Real-Time quartz- accuracy clock with battery backup. Amazingly, all on the same board . . . . . $595.

3. **MicroSoft RAM-DISK**—64K to 256K Memory with sophisticated virtual disk software. Works with DOS 1.1 . . . . . $495.

4. Memory expansion kits for all of the above boards $150./64K

SUPER-MATH 87 with FLASH-DISK (NEW!)

1. **8087 Package**—Plug in 8087 math chip puts overdrive in your number crunching. Adds 8087 IEEE standard floating-point math to your IBM Macro Assembler (not included). Produces linkable. EXE files. Callable from Pascal, Basic, Fortran—needs IEEE to MicroSoft conversion macro (until Microsoft goes IEEE)

2. **FLASH DISK**—for those who already have the Seattle RAM + Board . . . (or other plug-in memory boards), lets you use your 'board' as a virtual disk—Load entire disk into on-board memory for lightning-like response time. (Works best with total board memory of 192K: 160K for virtual disk memory and 96K for the system.) Incredible with MicroPro's Wordstar and other WPs. Available separately for $70.

3. **PRINT SPOOLER** helps your slow-speed printer keep up with the Super-Math; reallocation of devices, and more.

Entire Package . . $350. Flash Disk Alone . . $70.

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1. **PATCHER PLUS**—A generalized patching program to allow correction of any PC-DOS disk file in the field (Like maybe the Wordstar word-processing program?) Ideal for programmers, EDP managers, computer stores, etc. Good for device- dependent fixes. Includes Wordstar modification notes and printer driver . . . . . $100.

2. **WS-DRIVER**—Make your printer sit up and wag its power cord . . . and perform other tricks with this unique set of "fixes" tailored to your own printer. (Superscripts, subscripts, bold printing and more.) Lets your printer do everything it was designed to do. Free with purchase of WORD-STAR from MicroCorp . . . . . $50.

LET YOUR PC GOSSIP

1. **COMM-PLUS**—Another improvement from MicroCorp. This complete on-disk patch kit lets you modify your IBM Async. program to support uploading and downloading, printers, auto-dial for Hayes modem and more. Includes 150 Pg. INTELLITERM tutuorial. (Full credit when you buy soon-to-be-released INTELLITERM) $25.

2. **INTELLITERM**—Just wait till you get a look at this program . . . The first truly user-friendly, full capability communications program. You'll be online in an instant—with INTELLITERM. Easy to tell who's "talking" with separately scrolling windows. Setup your own bulletin board with optional CBBS module . . . . . $150.

DATAMASTER—The Premier Database Information Manager $800. Possibly the most flexible data base management system for your IBM PC. Provides true variable length records, user-defined input and report formats, reformatting of previously entered data records, and much more. (Scheduled for Winter '83). (Full trade-in credit for any data-base manager bought from MicroCorp).

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FREE CATALOG

PC 9-82

Hardware

MISCELLANEOUS

Memory Add Ons

233 Two dual-headed 40-track drives with up to 640K of storage and an internal mount. The combination card has a parallel printar, an RS-232 asynchronous communications adapter, clock/calendar functions, and uses only one slot. Two single-headed 40-track drives with 320K of disk storage and an internal mount are also available, as is 48K additional RAM. The 27 chips plug into the master PC board. An add-on memory card that uses 64K dynamic RAM chips is available in increments of 64K, 128K, 192K, and 256K. *(List Price: Duol-headed $630, combo cord $279, single-headed $450, odditionol RAM $75, odd-on memory cord $450–$725)*

Apparat, Inc.
4401 S. Tomorac Pkwy.
Denver, CO 80237
(303) 741-1778

Automatic Disk Copier, Format Module Software

234 An eutomatic floppy disk copier with compatibla software. Model 5248 duplicates and verifies single- and double-sided 5¼-inch, 48-tpi disks, and provides operator-selectable copies in quantities of one to 999. The Formot Module Softwore enables the copier to automatically reproduce programs written for the PC using PC format. *(List Price: Format Module $450, Model 5248 disk copier $14,000)*

Medio Systems Technology, Inc.
17991 Fitch Ave.
Irvine, CA 92714
(714) 957-0240

Printer Products

235 A printer cable, printer adapter and printer forms stand. *(List Price: Printer forms stond $55, printer cable $55, printer odopter $150, IBM Product Center prices)*

IBM Corporation
System Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois, 447-0890 Alasko, Hawoii

Apple II Joystick Interface Module

236 A module that connects with the PC game adapter and provides two connectors for Apple II-compatible paddles or joysticks. Each connector supports two variable-resistanca inputs and up to two push-button switches, allowing the use of two joysticks or four paddle units. It is IBM software compatible. *(List Price: $29)*

Automated Business Mochines, Inc.
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

BSR-X10 Interface Module

237 A modula that uses tha PC cassetta port to provide the functions of the BSR-X10 controller. Direct software control is provided for up to 256 devices—16 devices aach of 16 different house codes. Sample software in BASIC is provided showing the means of accessing the controller functions. *(List Price: $95)*

Automoted Business Mochines, Inc.
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

CYC-48

238 A bar code scannar/decoder that plugs into tha PC's RS-232 port. Passing the wand over a bar code sends the code's ASCII represantation to the RS-232 port. The code is then raad by an existing program as an ID number, a serial number, o a part number. The bar code itself can be generated on the PC's printer using the manufacturar's program *BAR-GEN*. Users need a dot graphics feature to use the program.

A voice output option is also available fo users to verbalize directives and responses from the computar. Words can be verbalized at any time by sending a straam of phoneme to the CYC-48. A booklet containing phoneme rapresentations of 45 basic sounds, dipthongs and 1,400 words is included. *(List Price: CYC 48 $650; BAR-GEN $345, voice option $245)* **Requires:** RS-232 port.

New Wave Systems
12123 Washington Pl.
Mor Visto, CA 90066
(213) 475-8545

***Micro Disc*, Amdek Corporotion**

Match-Box

239 A programmable computer cablin system that can be used to fit various cable configurations. Two component connect almost any two pieces of hardware, with a combined langth of up to 110 feet. The components ara mated, end the system is programmed by moving pins into the correct sockets to maat each unit's requirements. *(Lis Price: $19–$53 depending on the number of conductors used)*

ICO-Rally Corporation
2575 E. Bayshore Rd.
Palo Alto, CA 94303
(415) 856-9900

***Automotic Feed Opticol Card Reader*, Chatsworth Doto Corp.**

Color/Monochrome Interface Cable Module

240 A module that connects to the color/graphics adapter and performs signal transformation to allow connection of the monochrome monitor. All features of the color/graphics adapter are supported including graphics to 640x200 pixels and multiple pages on low- and medium-resolution modes. It is IBM software compatible. *(List Price: $95)*

Automoted Business Machines, Inc.
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

Apple Joystick Interface

241 An interface that plugs into any standard IBM game adepter and provides connections for two Apple-compatible joysticks. *(List Price: $29)*

Requires: Game adapter.

Automated Business Machines Inc.
29352 Avocet Ln.
South Laguno, CA 92677
(714) 643-0439

PC-Apple Graphic Adapter

242 An adapter board that connects the standard IBM PC game card to a standard 16-pin socket, connecting all Apple PC geme paddles and joysticks to the IBM PC. *(List Price: $19.95)*

Requires: Geme adapter.

XEC Company
14222 Dallas Pkwy. #1104
Dallas, TX 75240
(214) 980-9736

Phone Chronicle

243 Peripheral and software that logs outgoing calls with date, time, length of call, and number called. Date, time, and duration of incoming calls are also logged. This assists businesses in identifying unauthorized or personel calls and assigning calls to the proper department. Up to 200 calls can be logged in memory. Connects to the telephone line and includes software. *(List Price: PC-1 $395, PC-IV expanded version $995)*

TecMo Inc.
2918 Scott Blvd.
Sonto Clora, CA 95050
(408) 727-2751

Surge Protector

244 A power stabilizing unit that provides a buffer between electronic equipment end voltage spikes and power surges. It is designed for a single outlet and is well suited to the PC environment where one computer is usually plugged into an outlet at a time. It is less costly than double-outlet designs end dissipates up to 950,000W at 100 microseconds, providing fast and powerful surge protection. *(List Price: $39.95)*

ICO-RALLY Corporation
2575 E. Bayshore Rd.
Polo Alto, CA 94303
(415) 856-9900

Cassette Cables

245 A cable set that allows use of the IBM PC cassette interfece. *(List Price: $25 including instruction monual)*

Personal Computer Products
1400 Coleman Ave., Ste. C-18
Sonto Clara, CA 95050
(408) 988-0164

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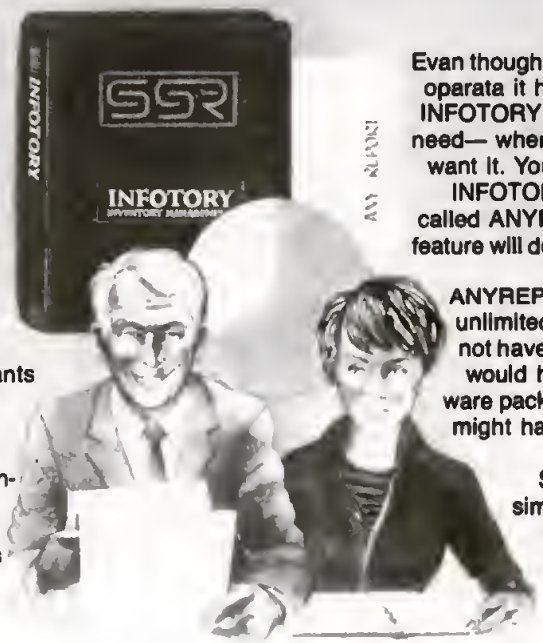
With INFOTORY *anyone* in tha offica can laarn tha systam—in lass than four hours...because it's so easy to usa.



Evan though the system is aasy to laarn and oparata it has graat flexibility and power. INFOTORY promisas the information you need— when you need it *and* the way you want it. You design your own report with INFOTORY'S unique reporting feature called ANYREPORT™. This easy to learn feature will deliver customized reports within minutes.

ANYREPORT's capabliities are almost unlimited. Other inventory systams do not have an ANYREPORT feature. You would hava to buy an additional software package to get this extra...and you might have to taka a computer course to learn how to use it.

So, for the best, most flexibla, simple-to-learn inventory packaga avaliable...stop in at your naarast IBM PC Dealar, or giva SSR a call for more information.

SSR Corporation, 1600 Lyell Avenue, Rochester, New York Telephone 716-254-3200

Hardware

MISCELLANEOUS

Graphic Analysis

246 A hardware and software package. Tha hardware includes a digitizer with .001-inch resolution (sizes of 11- by 11-inch to 42- by 60-inch active area are available) digitizing stylus, powar supply, communications intarface cable, and operator's manual. The software supplied on disk can be used for different kinds of maasurements including material usege, cost, length, distance, perimetar, area of irregular polygon, and display of X-Y coordinates to .001 inches.

The softwere is controlled by e 22-function block menu attached to tha tablet. Eleven functions ere predefined, but tha remaining 11 functions can be user defined. The softwara was designed so users can access the digitizer input driver, measurement routines, and menu to build custom digitizing programs for speciel applicalions. The program allows users to bypass digitizer integration problems. *(List Price: With 11-by 11-inch digitizer $1,419, with 11- by 17-inch digitizer $2,608, with 20- by 20-inch translucent digitizer $3,025)*

Requires: One disk drive, (other requirements not availabla).

GTCO Corporation
1055 First St.
Rockville, MD 20850
(301) 279-9550
Telex: 898471

Software-Controllable Switches

247 A port expander that ellows single-port units to interfaca with multiple peripherals or computers. Model QS11 allows a single port to communicate with one of four output devices. Modal MO11 ellows four computers, modams, or terminals to share a common unit, such as a printar. Model MO11 can also be used for systam back-up. Input and output ports can be selected by the user via one of 128 codes. Control code and baud rate are selectad vie switches on the rear of this compact, lightweight unit. Extra cables or cards are not needed. Switches can be controlled by terminal, modem, or computer. *(List Price: $395)*

Requires: RS-232-C or Cantronics interfaca.

Advonced Systems Concepts, Inc.
P.O. Box Q
Altodeno, CA 91001
(213) 794-2308

TYPE-'N'-TALK Synthesizer, Votrax, Division of Federal Screw Works

Standby Power System

248 A battery that provides 200 watts of emargency electrical power at 120 volts for 20 minutes should normal power supply feil. It insures against irretrievable loss of date in memory or even irreversible damaga to magnetic media should power loss occur during disk accass. If the power drops below 102 volts, a sensing device immediately switches to output from an internally sealed gell electrolyte leed-ecid battery, end a red werning light alerts the user to a switch. Continuous-line filter traps eliminata spikes in the current during normal usage. *(List Price: $489)*

Gould Inc.
P.O. Box 43140
St. Poul, MN 55164
(612) 452-1500

Programmable Optical Mark Reader

249 An optical mark reader that can be programmed from the host computar through a specially designed language. When power is applied, the readar defaults to either a Hollerith to binary or Hollerith to ASCII moda, dapanding on a switch setting, allowing tha user to define the columns of the card from the host. It is available with a driver program and test scoring packaga. *(List Price: $1,095)*

Requires: Serial interfeca.

Chatsworth Data Corp.
20710 Lassen St.
Chotsworth, CA 91311
(213) 341-9200

Graphic Analysis Package

250 A package that provides the hardwara and software needed to use the digitizer as an alactronic planimeter for computing perimaters, lengths, distances, and areas of polygons. Tha user measures distances and lengths, accumulates successive measuremants, subtracts lengths from the accumulator, computes the area and perimeter of an irregular polygon, epplies multipliars, accumulates areas and perimeters, scales digitizer coordinates to user's scala, assigns multipliers to measurements, resets all variables, stores measuremants, and prints hard-copy varsions of the computations. *(List Price: $1,206)*

Requires: 64K, asynchronous adapter, monochrome adapter, (printar optional).

GTCO Corporation
1055 First St.
Rockville, MD 20850
(301) 279-9550
Telex: 898-471

Smartmodem to PC Cable

251 A cable that connects a Hayes Stack Smartmodam to the asynchronous communications interfaca of the PC. The cable has RS-232-C connectors at each end. *(List Price: $34.95)*

Requires: Asynchronous communications adapter.

Starware
1629 K St. NW #551
Woshington, DC 20008
(202) 466-7351

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Mousetrak

252 A graphic input device that replaces joysticks and game peddles, used for games, business graphics, and CAD/CAM applications. This two-dimensional hand-held tracking machanism operates on a table or desk top. It features three switch select buttons. *(List Price: $99.95)*
Requires: Game adapter.

XEC Company
14222 Dallas Pkwy. #1104
Dollos, TX 75240
(214) 980-9736

RS-232 Analyzer

253 A plug-in adapter that shows the RS-232 signals end what's happening. It can switch signals around, greatly simplifying the hookup of RS-232 devices. *(List Price: $70 including instruction monuol)*
Requires: Asynchronous communications adaptar.

Personal Computer Products
1400 Colemon Ave., Ste. C-18
Sonto Cloro, CA 95050
(408) 988-0164

FT-156 Light Pen

254 A light pen that offers an alternative to keyboard intaraction. Tha computar takes appropriate action when the pen is touched to the screen. In a graphics system, elements can be selected for manipulation and deletion. This device is also useful for commercial applications such as menu selection, in educationel programs, and for playing computar games. Drivar routines are supplied for Pascal and FORTRAN. *(List Price: $159.95, demo/gomes disk $139.95,)*
Requires: 16K, cassette, (48K, one disk drive recommended).

FTC Doto Systems
10801 Dale, Ste. M-2
P.O. Box 615
Stonton, CA 90680
(714) 995-3900

Multiplexer, Network Interface Cards

255 Multiplexer allows up to eight computars to share a Corvus disk systam. Included is tha hardware, constellation software, and a natwork system manual. The Muitiplexer network interface cards must be purchased to attach a computer to the Multiplexer, one to each computer on the network. The required software is included with the cards. *(List Price: Multiplexer $900, interfoce $220-$300 depending on cable length)*

Corvus Systems, Inc.
2029 O'Toole Ave.
Son Jose, CA 95131
(408) 946-7700
TWX: 910-338-0226

Video Extension Cable

256 A 3-meter-long combined power end D-9 video extansion cable set for locating the video display remotaly from the processor unit. *(List Price: $75)*

RGB Designs
175 S. Son Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

helpful products for your computer

Printer Stands

End the paper mess on your computer desk. Our printer stand allowe your paper to be fed from under the printer, making room for the used paper to stack behind the print out of the way. Available with an optional removable shelf (Shown) for easy computer forms change. Available in Large size also, for MX-100 and other large printer users also. Also available with center slot for bottom feed printere. (Large only).

Regular Stand	(300010)	$29.95
Regular w/ahelf	(300011)	$44.95
Large Stand	(300020)	$34.95
Large w/shelf	(300021)	$49.95
Large w/elot	(300050)	$49.95

Diskettes

Elephant Memoriee Systems Diskettee at a special LOW price!!!

Single Density/Single Sided/Soft Sector	500351	$22.50
Double Density/Single Sided/Soft Sector	500352	$25.50
Double Density/Double Sided/Soft Sector	500353	$32.50

Portable Disk Bulk Eraser

Clean all old data off of your diskettee before reusing them! This is a MUST for your computer room. Easy to use, non-electric, portable!!!
500102 ..... Only ...$4.95

Ribbon Reloads for MX 70/80/100

Reload your old ribbon cartridge for much lese than replacing the cartridge! Quick and easy to do, takes only about 2 minutea each to reload. Includes complete instructions. Available in Black and 4 popular colors!

Black Reload	(500000) $3.95 ea.	(500001) $39.95 dz.
Red Reload	(500010) $4.95 ea.	(500011) $49.50 dz.
Blue Reload	(500020) $4.95 ea.	(500021) $49.50 dz.
Green Reload	(500030) $4.95 ea.	(500031) $49.50 dz.
Brown Reload	(500040) $4.95 ea.	(500041) $49.50 dz.

Ribbon Cartridges for MX 70/80

Replacement cartridgee for your printer. Complete cartridge for your printer at great eavinge! Available in Black and 4 popular colors! Buy in 3 packs and save!

Black Cartridge	(500050) $10.95 ea.	(500051) $29.95/3
Red Cartridge	(500050) $11.95 ea.	(500061) $31.95/3
Blue Cartridge	(500070) $11.95 ea.	(500071) $31.95/3
Green Cartridge	(500060) $11.95 ea.	(500081) $31.95/3
Brown Cartridge	(500090) $11.95 ea.	(500091) $31.95/3

BT ENTERPRISES
171 Hawkins Rd.
Centereach, N.Y. 11720
(516) 981-8888 (voice)
(516) 588-8836 (modem)
Dealer Inquires Welcome
Prices subject to change
N.Y.S. Residents Add Tax Add $2 shipping — handling

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Hardware

MISCELLANEOUS

Type-'N-Talk

257 A text-to-speech synthesizer with an unlimited vocabulery. Text is defined as any printable ASCII character when not preceded by en escape code or phoneme delimiter. Any received text is stored in the input buffer until spoken. Vocabulery is entered in the same wey other deta or programs ere entered. Messages ere typed es literal statements using standard English text. A 25-pin DIP connector is provided. Connector cables can be ordered separately. *(List Price: $375, cable $24.95)*

Requires: Serial interface, 75–9,600 baud.

Votrox, Division of Federal Screw Works
500 Stephenson Hwy.
Troy, MI 48084
(313) 588-2050
Telex: 810-232-4140

Discortex Graphics Tool Kit

259 A graphics package with memory board, light pen, and softwere that provides a 1280x800 pixel, four-color design erea for graphics design and editing. Similar to a spreadsheet in concept, the large design aree makes the screen a window with an area equivalent to 16 PC screens. The memory board also contains graphics subroutina ROM, space for user EPROMs, circuits for a light pen, and a light pen connector. The software offers fast vertical and horizontel scrolling in addition to the usual graphics editing end design functions. It is especielly useful for enimeting large and complex subjects. *(List Price: $599)*

Requires: Color/graphics adapter.

DISCORTEX Corp.
87 Bethpage Rd.
Hicksville, NY 11801
(516) 935-5538

Dotosover, Cuesto Systems, Inc.

Joysticks, Game Paddles

258 Joysticks and game paddles designed for the IBM PC. Suitable for games end educational use. *(List Price: Joystick $44.50, pair of paddles $42.50)*

Requires: Game adapter.

Tomcor Products
99 Lily Pond Ln.
Kotonoh, NY 10536
(914) 232-7405

Isolators ISO-1, -2, -3, -11, -17, Circuit Breaker, Remote Switch

260 A series of isolators that protect microcomputers from computer errors caused by powerline interference, computer system equipment interaction, spike damage caused by copier/elevator/air conditioners, and lightning damage. The isolators are geered for small offices or laboratories up to large systems used in harsh environments.

Circuit breakers and remote switches are available to work with the isolators. Users should specify CB or RS when ordering. *(List Price: Isolotors $69.95-$181.95, circuit breaker $9, remote switch $16)*

Electronic Specialists, Inc.
171 South Main St., Box 389
Natick, MA 01760
(617) 655-1532

Automatic Feed Optical Card Reader

261 An automatic-feed, optical card reader that can read cards varying from 5–12 inches at a rate of up to 60 cards per minute. Each card mey have as meny as 128 columns. *(List Price: $1,595)*

Requires: Seriel interface.

Chotsworth Doto Corp.
20710 Lassen St.
Chotsworth, CA 91311
(213) 341-9200

Datasaver

262 A bettery-powered AC backup unit for use during AC power interruptions or transients. It is availabla in 90-watt and 200-watt capacities with an automatic battery chergar, a front panel indicator light, an elerm buzzer, end a remote elarm signal for system-interrupt use. It switches to backup power within 12 milliseconds. *(List Price: 90 watt $395–$415, 200 watt $695–$730)*

Cuesto Systems, Inc.
3440 Roberto Ct.
Son Luis Obispo, CA 93401
(805) 541-4160

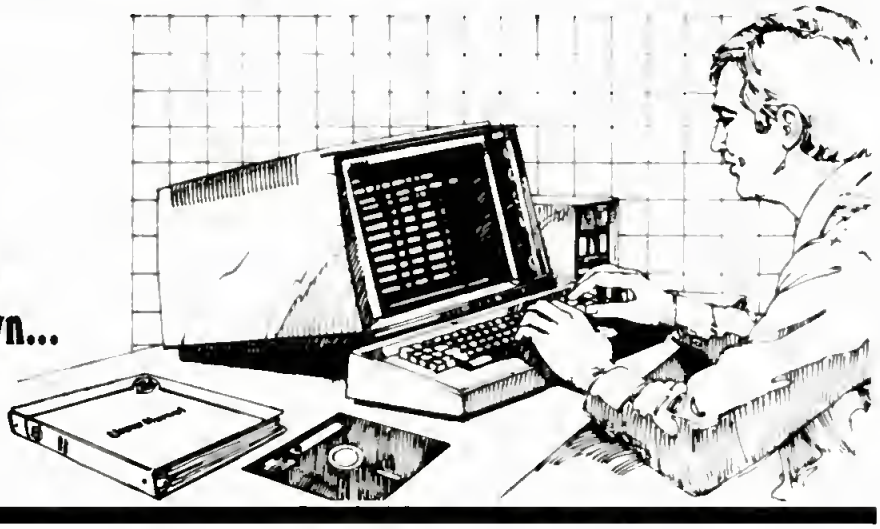
APS-5 Reserve Power Supply

263 A reserve power supply that provides backup power during power flickers, blackouts, end brownouts. When power feils, visual, audible, end electronic signals elert the user, and the APS-5 begins supplying up to 50 minutes instantaneous backup power. It eutomatically recharges its batteries and indicates a low battery charge. Features include en on-board transiant suppression system and a steel case for improved RFI/EMI suppression. *(List Price: $395)*

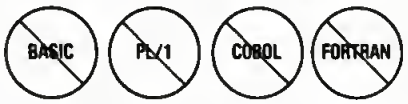
Control Technology, Inc.
8200 N. Classen Blvd. #101
Oklohomo City, OK 73114
(405) 840-3163

Condor database obsoletes compilers!

Condor relational database management system makes your personal/business computer far simpler to use and much more useful to own... for less money... than other software.



Plain English, no computerese.
Condor relational database management is a complete development and operation system. It eliminates BASIC, PL/1, COBOL, FORTRAN, or other compilers in almost every case. It allows you to deal directly with your information without complex code words. In plain English, *it lets you manage your business instead of your data.*



Save 90%. Because no complex programming is needed, Condor saves *up to 90%* of the cost of program writing and testing! You also eliminate costly and time-consuming programmer "talent searches."

State-of-the-art relational format.
Condor makes traditional programming approaches using compilers *obsolete.* Features such as SORT, DEFINE, ENTER, POST AND REORG permit rapid database creation, access, control, monitoring and manipulation. For instance (by using the JOIN command), you can combine the information contained in two large file cabinets—such as "Purchases" and "Labor Cost"—into a single file—in one operation. To do the same task, ordinary software usually requires substantial reprogramming.

Easiest to learn and use.
Independent evaluators rate Condor *more "user-friendly" than any other personal / business computer database system.* After a brief study of the manual, you start building a database *within 15 or 20 minutes.*
In fact, *Condor has allowed many hundreds of first-time users to produce and process their own management reports.*

Only $295 for entry level.
Condor's multi-level modular design provides *full upward compatability,* up to *the most powerful software of its kind in the industry.* The entry level Condor I features database file development and management; entry, update, and posting; inquiry and report writing capabilities; and complete operations aids. And as information needs grow, you can easily upgrade to Condor III for writing highly complex reports and fast-query indexing.

Guaranteed to do more work, more easily for greater savings.
Put Condor to the test. Experience its power and versatility firsthand...how it puts you in direct touch with your data, while eliminating complex programming. You must agree that Condor saves you time, work *and* money...or return it within 30 days for a complete and prompt refund (at participating dealers only).

Questions? See Condor at your local software dealer, write to P.O. Box 8318, Ann Arbor, MI 48107, or call **(313) 769-3988.**

condor
COMPUTER CORPORATION
P.O. Box 8318, Ann Arbor, MI 48107

The Industry Standard...Selected by Major Dealers, Distributors and Manufacturers.

Hardware

MISCELLANEOUS

Math Master

264 A combined hardwara-softwara product that provides the number-crunching abilities of a high-speed mathematics chip and the 8087 microprocessor. This chip fits into an ampty slot on the PC's motherboard and is supplied along with a matched 8088 microprocessor that replaces the PC's current 8088 chip. Math Master also includes software that supports programs written in FORTRAN, COBOL, BASIC, and assembly languaga, and complete documentation and instructions for installing the new chips. *(List Price: $450)*

Sun Coast Doto Sciences
680 Center St., Ste. B
Costo Mesa, CA 92627
(714) 631-9241

Asynchronous Communication Controllers

265 A line of single- and dual-lina asynchronous communication controllers. Features include all standard baud rates up to 19,200 and full modem signal support on both lines. They operata with IBM's Asynchronous Communications Support Program. *(List Price: Single $150, dual $195)*

PERSYST, Inc.
22957 La Codena
Laguno Hills, CA 92653
(714) 859-8871

MXPlus

266 A plug-in module that allows tha printer to skip perforations automatically, giving users the top and bottom margins on each page. Users can manually controi the print mode to select condensed, emphasized, or normal printing by using the front panel buttons. Requires no soldering for installation. *(List Price: $49.95)*
Requires: IBM or Epson printer.

Micro-Z Applicotions
22704 Ventura Blvd. #141
Woodlond Hills, CA 91364
(800) 835-2246, (805) 583-8645

Videoslide 35

267 A color slide producer that records video images onto 35mm color film and can be used with most color raster graphics terminals. Videoslide 35 can accept vidao inputs in most formats including RS-170 RCB, TTL RCB, NTSC, or others (users should specify when ordering).

The system is connected to the video output or in parallel with the monitor used by the operator. Controls consist of an on-off switch, three thumb wheel switches for color balance control, and an exposura start control. Additional software is not needed for the system's operation nor is special operator training. *(List Price: $2,499)*
Requires: Color/graphics adapter.

Lang Systems, fnc.
1392 Borregos Ave.
Sunnyvole, CA 94086
(408) 734-3332

GRS 232 Series, GDn Series, GTn Series

268 A series of switches requiring 25-pin D-type connectors such as those found on the monochrome, parallel, or asynchronous communication adapter boards. Models include two- and three-way switches, dual, triple, and quad three-way switches; and a 19-inch rack model using up to ten channels (eight-module CTn series) or 18 channels (eight-module GDn series). Five-year warranty. *(List Price: GRS 232 Series two-way switch $159, three-way switch $198, dual three-way switch $369, triple three-way switch $799, quod three-way switch $899, GDn Series $149 per chonnel, GTn Series $169 per chonnel; Rack $115)*

GfLTRONfX Universal Switches
970 Son Antonio Rd.
Polo Alto, CA 94303
(415) 493-1300
Telex: 345-542

SooperSpooler

269 A printer interface that acts as a 16K buffer. Text or other data can be dumped into the buffer and then sent to the printer. The microcomputar itself is freed from the task of printing. Othar standard features include pagination, formatting, and headers. *(List Price: $349, memory exponsion $159)*
Requires: Printer.

Compulink
1840 Industriol Cir.
Longmont, CO 80501
(303) 651-2014

Softwore-Controlfobfe Switches, *Advonced Systems Concepts Inc.*

Universal Video Controller

270 A stand-alone "box" that controls video disk and tape machines or other devices requiring serial or parallel communications. It runs tapes and disks separately or simultaneously and can run two videodisk players at once, allowing simultaneous video and audio input.

UVC can access any computer using an RS-232 port, and can act as an external interface with its own power supply. It houses all drivers on board in ROM chips, and comes with a Z-80 processor. The internal software is written in EPROMs and saves memory space. *(List Price: $1200)*

Requires: Serial interface, cable.

Allen Communication
3004 Arapahoe Ave.
Boulder, CO 80303
(303) 530-7300

PC-MATE Shared Device Controller (SDC)

271 A peripheral that allows two, three, or four PCs to share a single printer or a similar parallel device. Each computer's parallel port is connected to one of the four input ports on the Shared Device Controller, while the printer is connected to the output port. Any computer can gain access to the printer through the SDC by issuing a 1-byte control code. If the SDC is currently servicing another system, a negative response is provided to the new control request; if the SDC is available, a positive response is provided. One-year warranty. *(List Price: $195)*

Requires: One parallel printer output for each PC connected.

Tecmor Inc.
23600 Mercantile Rd.
Cleveland, OH 44122
(216) 464-7410
Telex: 241-735.

MicroFazer

272 A printer buffer for an IBM or Epson printer. It is controlled by a custom LSI and receives data from the computer at up to 4,000 cps. Data is transferred as rapidly as the printer can handle it. Buffering of 8K, 16K, 32K, or 64K is available. *(List Price: $159–$299)*

Requires: Epson or IBM printer.

Quodram Corporation
4357 Pork Dr.
Norcross, GA 30093
(404) 923-6666

***SPS0200 Standby Power System,** Gould Inc.*

Ramlock

273 A standby power controller and line voltage monitor that automatically switches to an auxiliary power supply if insufficient power is reaching equipment. Ramlok must be used in conjunction with a maintenance-free, lead/acid auto or marine battery (not supplied with this product). If the normal power supply is interrupted or voltage goes above or below acceptable limits, Ramlok automatically shifts to the standby battery for power. The contents of the computer's memory are not lost, and the backup battery can provide up to 30 minutes power to safely store all data on disk. This power supply controller can be ordered in five configurations varying from 250 to 1000 watts and 115 or 230VAC. *(List Price: $375–$865 depending on configuration)*

Requires: Maintenance-free auto or marine battery.

Ladco Development Company
P.O. Box 464
Olean, NY 14760
(716) 372-0168

Joystick

274 A joystick game accessory whose features include large buttons, trim adjustments, and molded cables. *(List Price: $64.95)*

Requires: Game adapter.

TG Products
1104 Summit Ave. #106
Plano, TX 75074
(214) 424-8568

Hayes Stack Chronograph

275 A calendar/clock system that features day, date, and time reporting through the RS-232-C interface and includes a 6-digit, vacuum fluorescent display. The Chronograph operates at 300 or 1200 baud with automatic baud rate and parity sense detect. It was designed for applications needing time-keeping such as report generation, time-sharing, electronic mail, and light, burglar alarm and sprinkler system control. Modes include 12- or 24-hour operation. The calendar mode includes semi-automatic leap year adjust. Battery backup is provided in case of power failure. Two-year limited warranty. *(List Price: $249)*

Hayes Microcomputer Products Inc.
5835 Peachtree Corners East
Norcross, GA 30091
(404) 449-8791

Light Pen

276 A plug-in light pen that detects signals from black and white or color TV monitors. The pen, set to 1 millilambert, has a visible range and infrared spectral response of 900 nanometers. Response time ranges from 0.3 microseconds at 1 millilambert (1 ft. lambert) screen brightness. The cable connector has four wires with supply, ground, pen, and switch. *(List Price: $150)*

Requires: Color graphics adapter.

Symtec
15933 West 8 Mile
Detroit, MI 48235
(313) 272-2950

Hardware

MISCELLANEOUS

TDI Joystick

277 A joystick that can be used with games or as an applications controller. It has dual firing switches mounted sida by side for use in playing games. Switches can be depressed simultaneously or individually. Backlash is minimized by utilizing precision, tight tolerance parts. The self-centering standard is adjustable electronically. A 1-year workmanship warranty is included. *(List Price: $59.95)*

Requires: Cama adaptar.

Tech Designs, Inc.
3638 Grosvenor Dr.
Ellicott City, MD 21043
(301) 291-0818

Adam And Eve I

278 Game paddles for game and application programs. Handles can be unplugged individually for convenience. Paddles include trimmer control for adjustment to eliminata "short scraen" and "wrap around" problems. Printed circuit board is utilized for raliability, while cable stress reliaf at the connector and in the handles protects against rough handling. *(List Price: $39.95)*

Tech Designs, Inc.
3638 Crosvenor Dr.
Ellicott City, MD 21043

ConvertaBuffer

279 A peripharal that eliminates the problem of being unable to use tha keyboard's PrtSc key and BASIC's LPT and LLIST commands with a serial printer. It anabies a printar equipped with e serial interface to plug directly into the PC's standard parallel printer adapter without removing the cover of the system unit. Tha built-in buffer of the CB-32 holds up to 800 lines or 16 minutes of printing at 35 cps, allowing users to complete other work. *(List Price: CB-8 $229, CB-16 $269, CB-32 $299)*

Requires: Parallel printer adapter.

von Leivendyke Enterprises
Silvermine Ave.
Norwolk, CT 06850
(203) 846-4973
Telex: 643103

Joysticks and Paddles

280 Products designed for plug-in compatibility with the IBM PC. The joysticks feature either selectable spring-return centering or free-floating operation. Electrical centering adjustments are on each axis. *(List Price: Joystick $69.95, paddle $49.95)*

Kraft Systems, Inc.
450 W. Californio Ave.
P.O. Box 1268
Visto, CA 92083
(800) 854-1923, (800) 542-6436 Californio
TWX: 910-322-1471

Space Graphics, Space Tablet

281 A graphics peripheral designed to parform three-dimensional data acquisition and manipulation. It allows users to take a three-dimensional model of an object and view it from any angle, rotate it, scale it, and move it along any of three coordinata axes.

It permits interactive modification of the position information using tha Spaca Tablet. Hard copies of drawings can be produced on an Epson printar. Tha tablet permits direct intaractive acquisition of three-dimansional position coordinates. It works on a principle of rigid arms connected by rotational joints. The ability to directly digitize X, Y, and Z coordinates permits substantial expansion of the concepts of computer-assisted design. Using this device, tha user can design in three dimensions and than get two-dimensional perspective drawings. *(List Price: $595 including Space Tablet)*

Requires: 64K; Epson or IBM printer; Space Tablat: color/graphics adapter, game control adapter.

Micro Control Systems, Inc.
230 Hartford Turnpike
Vernon, CT 06066
(203) 643-4897

Joystick Modifying Kit

282 A modifying kit that includes a special connector, instructions, parts numbers, and a short demonstration program for altering a pair of Radio Shack joysticks for the PC. Modification requires a special connector and a soldering iron. *(List Price: $5)*

Requires: Cama adapter.

Personol Concepts
635 Wellsbury Woy
Palo Alto, CA 94306

Large Print Video Terminal, The Orator

283 A talking terminal that enables a computar to speak rather than print its output onto a terminal, providing computer accessibility to the blind and visually impeired. The tarminal spells and reads words by using a speech synthesizer board. It speaks back anything sent to the terminal. The Orator is designed to be used separately or with the Large Print Video Terminal. Tha LPVT can be used with black and white or color monitors, or can be attached to any standard television. Users specify letter size, interlina and interletter spacing, and rate of display. The LPVT produces between 4 and 8 character sizes, ranging from 3/18 inches to 3 inches high. *(List Price: Both $9,600, LPVT $7,000, The Orator $4,600)*

Requires: Serial interface.

ARTS Computer Products, fnc.
80 Boylston St. #1260
Boston, MA 02116
(617) 482-8248

TDI Joystick, Tech Designs, Inc.

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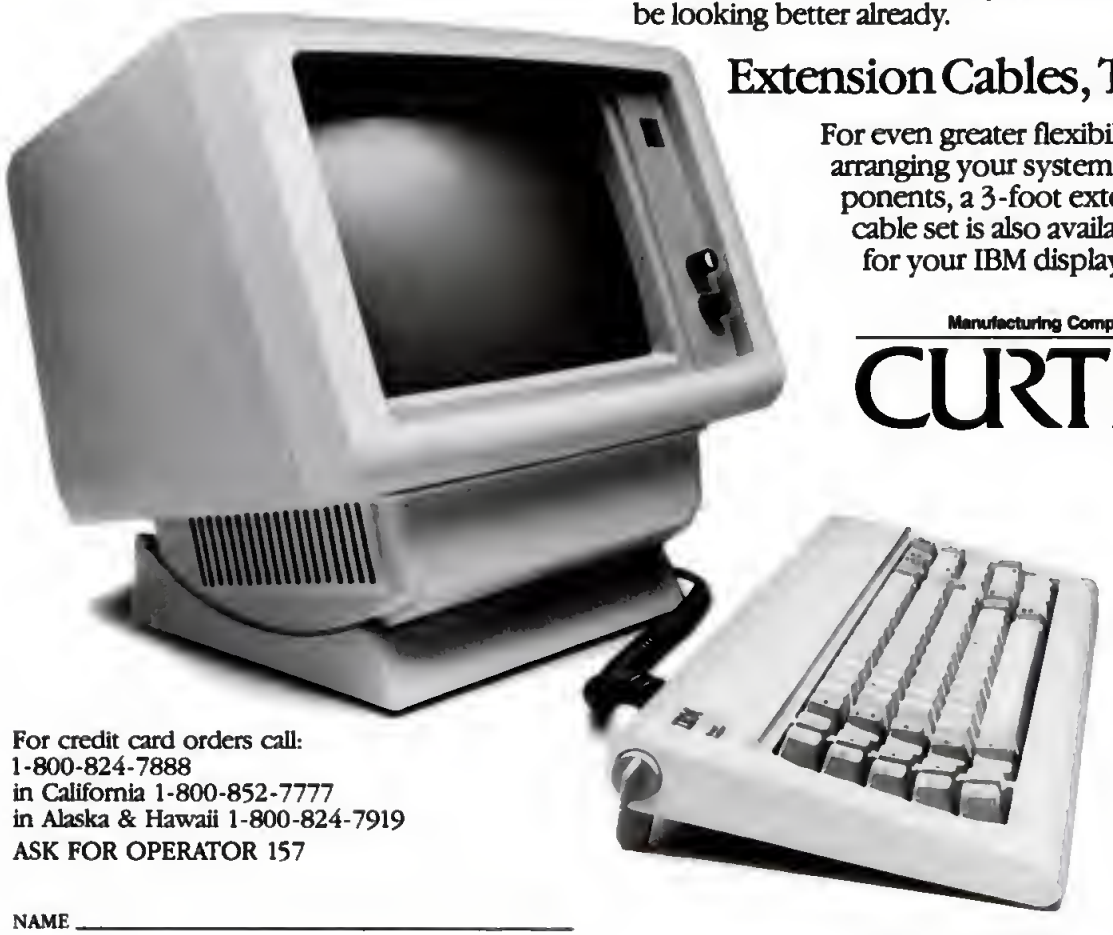

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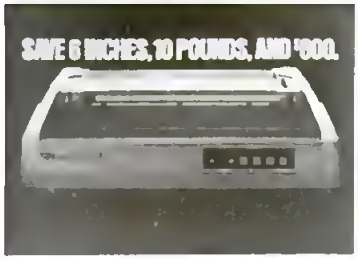

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System Software

System Software programs giva instructions about operations insida the computer. These programs tell the computer how to understand or use different languages, such as BASIC or COBOL. They also tall the computer how to control different parts of the hardware such as the keyboard, screen, or printer.

We've divided System Software into three groups: Operating Systams, Utilities, end Computer Languages. An operating system is a collection of programs that run the computar. Thase programs handle the tasks carried out on the computer. The operating system does such things es control the flow of information between memory and disk drives, organize information stored on disk, and pass information between languages and the keyboard, screen, disk drives, and printer.

When choosing an operating system, you need to consider several things. First, you want to find out whether the kind of applications software you naed is available for the operating system. Next, you should make sure the operating systam allows you to maka use of special features of your hardware, such as graphics or color capabilities. Then, depending on tha uses you intend for your computer, you may be concerned about tha operating system's speed in running programs. Programmers often want fast processing, while people who use their computers mainly as word processors might not be as concerned about speed. Finally, you want to check that the operating system is easy to use. Clear screen messages and prompts, and commands that are logical and easy to remembar make an operating systam (or any softwera program for that matter) more useful. Also, look at the documentation before you choose the operating system, or see a demonstration to halp you find out how easy the system is to use and how suited it is to your needs.

Utilities are system software programs that make using the computer easiar for programmers and other users. Utilities carry out routine procedures such as making backup copies of programs, sorting information, or renumbering program lines. Programmers find that utilities are very useful (henca the name), because whan thay use utilities, they don't have to write a naw program every time thay naed to carry out a routine task.

The utilities listed in the PC Product Guide can be used for some of the following activities: designing program screens, debugging programs (or removing errors), providing rapid access to data files, backing up fiies and programs, sorting and merging files, protecting files from unauthorized users, recovaring accidentally arased files, and printing out text and graphics.

When you look for a utility, maka sure it is something you will use. After using your computer for a while, you may see the need for a particular utility, such as one that helps you write programs to maka usa of the graphics features of your computar. Once you decide you naed a particular utility, make sure you understand the program as much as possible before you buy it. Ask specific questions about the program's capabilities, get sample printouts, and see e demonstration. Find out how well the program vendor supports the program with documentation and with answers to question both before the program is sold and afterwards.

Because computers don't understand or use the English language directly, computer scientists have developed special computer languages. A computer language is a set of commands or instructions tha computer can use. Some languages look similar to English (BASIC, for example), while others closely resemble the internal workings of the computer hardware. Languages are generall divided into two categories: interpreters an compilers. Interpreters are relatively easy t use, and debugging programs or removing errors with tham is fairly easy. Meny popula languages are compilers, such as COBOL, FORTRAN, or Pascal. Compilers convert programs (called source code) into machine instructions (called object code), which execute, or run, fastar than programs run by interpratars. Several of tha languages listed are compilers.

Tha IBM PC comes with BASIC. Many peopla find that BASIC is th only language they need. However, i you do a lot of programming, you might want to use anothar language for greate speed or to program special applicetions software. COBOL, for example, is often use for writing business programs, while FORTRAN is used for scientific or enginaering programming.

When choosing a language, consider you familiarity with it. Getting a new language fo your computer provides the perfect opportunity to learn tha languaga, and it ma even be your sole reason for choosing it. But find out about the language's debugging capabilities and how wall it handles routine programming tasks.

Software Requirements

FOR ALL SOFTWARE PRODUCTS we have listed memory, operating system, language, disk drive, interface, monitor, and printer requirements where available from manufacturers. Software requires DOS and BASIC except where other operating systems or languages are listed. Check with manufacturers and dealers before making a purchase to assure that software is compatible with your IBM PC.

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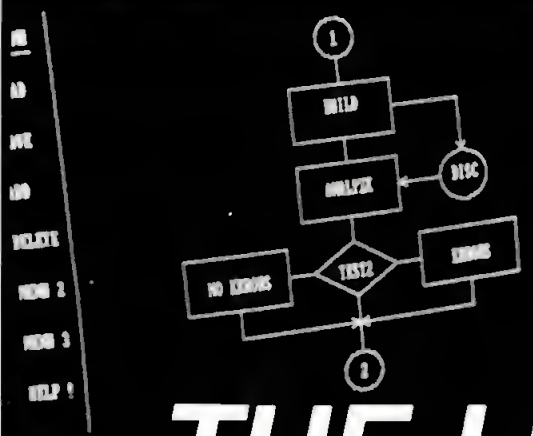

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OPERATING SYSTEMS

UCSD p-System IV-1

284 An enhanced varsion of the UCSD p-system thet includes herd disk support for Corvus and Tell Gress Technology, 25 percent more floppy storage, end compatibility wlth standerd IBM disks. The system provides double-sided, double-tracking, fast-stepping floppy disk drive support; RAM disk support, which can use up to 512K RAM; adapteble system support for adding custom I/O drivers; remote terminal support; XON/XOFF flow control for serial printers; and disk write verificetion. Hard disk support is availeble. *(List Price: Not ovoilable)*

Requires: 64K, one disk drive.

Network Consulting, Inc.
A106-1093W. Broadway
Vancouver, B.C.
Conodo V6H 1E2
(604)738-3500

UDI/OS

285 A universal development interface that uses Intel iRMX 86/Series III software. The UDI/OS mekes the PC compatible with Intel Series III software. The operating system also provides memory management, program utilities, overlay loading, and file management identical to the iRMX 86/Series III.

All programs that execute on Series III microcomputer development systems will run on the PC without modificatlon or linkage. The operating system is available in either IBM or Intel disk formet, and includes a seriel communicetions program for transferring files between the PC and the Intel Saries III. *(List Price: $995)*

Requires: 128K, two disk drives.

RTCS/Reol Time Computer Science Corp.
P.O. Box 3000-886
Comarillo, CA 93010
(805)482-0333

CP/M-86

286 An operating system that includes serial and parallel printar support, a "smart" screen driver that can emulate many CRT terminals, and 193K per single-side disk capacity. Enhanced with screen line editlng, a feature usuelly found only on mainframe systems, it elso offers built-in horizontal scrolling end page control. Compatible with a wide range of application programs, it can transfer fields to and from other computers and disk formets. A user menual includes sections for both novice and experienced users, end stresses scraen lina editing. *(List Price: $325)*

Requires: 64K, one disk drive.

CompuView Products, Inc.
1955 Pouline #200
Ann Arbor, MI 48103
(313)996-1299

Moil-XI, Micro Architect, Inc.

PC-DOS

287 A master program that supports one or more disk drives. It allows users to intaract with application programs stored on disks and use disks for information storage. Tha DOS disk contains Disk BASIC end Advanced BASIC, sample programs, and utilities.

Disk BASIC adds DOS file support, dete, time of day, and communications cepebilities to stenderd PC BASIC. Advanced BASIC adds edvanced graphics, music, and other capabilities.

PC-DOS provides the support necessary to develop end run programs using the PC MACRO Assembler, FORTRAN Compiler, COBOL Compiler, or Pascal Compiler. Applications programs, including *VisiCalc* and the Peachtree Software Series, run under DOS. Features include e line editor to creete, display, or chenge source (text) files; a debug utility to display, change, or trace a program in memory; a linker to combine the object output of the compilers and MACRO Assembler into relocatable modules; and the "chaining" of commands to produca a predatarmined sequence of programs. *(List Price: DOS ond BASIC Extension $40, fBM Product Center prices)*

Requires: 32K, one disk drive.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800)447-4700/322-4400 fllinois
447-0890 Alaska, Hawaii

Oasis 16

288 An operating system that turns the IBM PC into a multluser microcomputer. It coordinates up to three users on e standard system and up to 32 users wlth appropriate bus expansion. It also provides private or shared public lines, optional passwords, and privileged security eccess. It is compatible with Z-80 Oasis BASIC end C applicetions software and supports Corvus end XCOMP hard disks. Training classes are available for all levels of users. The opereting system includes JCL, BASIC, C, diagnostic routines, a full-screen editor, script processor, and communications package. *(List Price: $1,495)*

Requires: 128K, one floppy and one hard disk driva; multlusers 250K, two hard disk drives.

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7700 Edgewoter Dr. #830
Ooklond, CA 94621
(415) 562-8085
TWX: 910-366-7139

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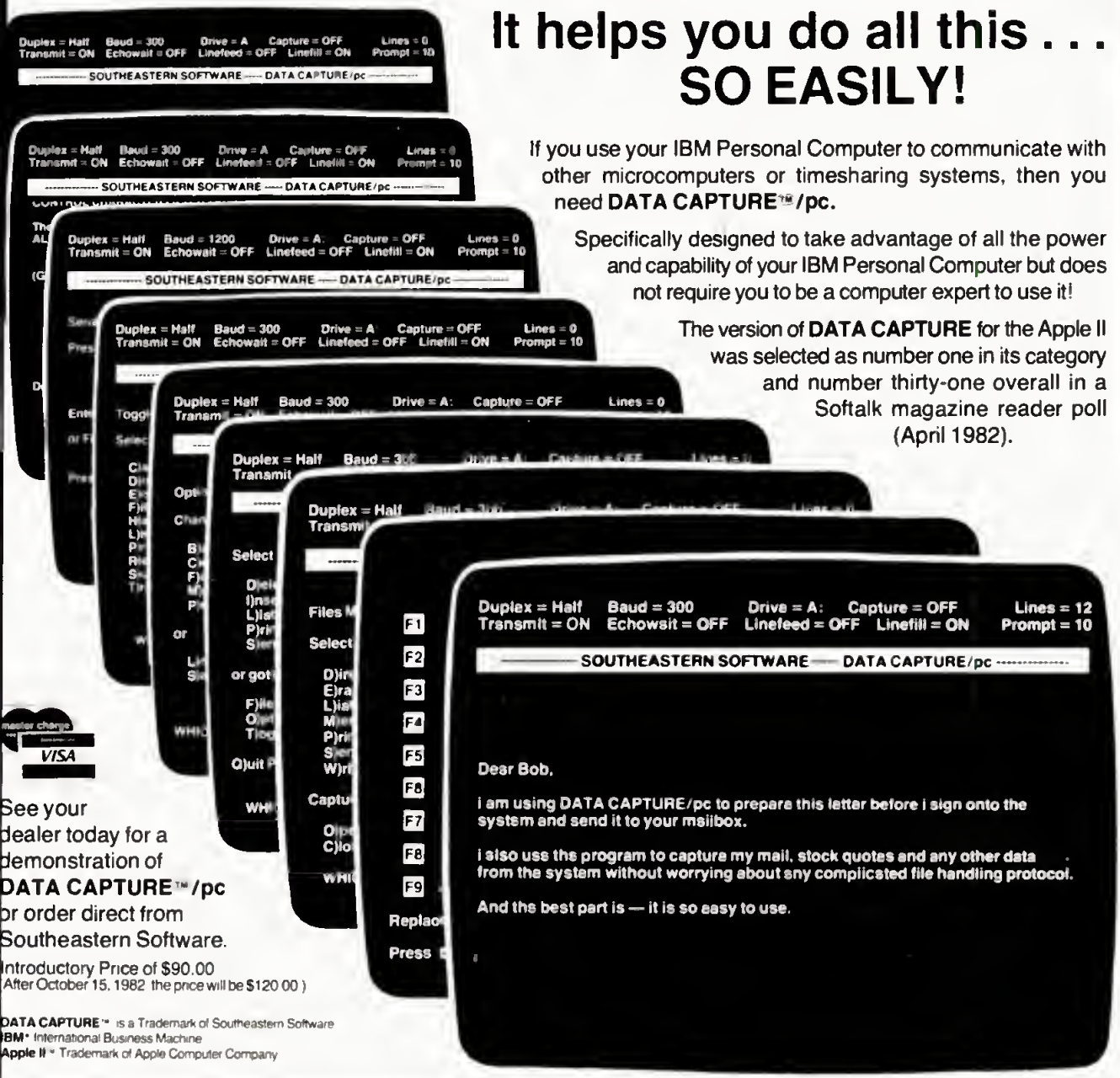

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OPERATING SYSTEMS

QUNIX

289 A UNIX-like, second generation, multitasking, multiuser operating system. Several compilers, such as BASIC, Pascal, and FORTRAN are available, as well as a full-screen editor and text formatter. Designed to enhance the PC's ability to be upgraded to advanced information processing, communication, and networking applications, QUNIX features the ability to interface uniformly to a wide variety of system hardware extensions or peripherals. *(List Price: $150 (single user), $250 (multiuser)*
Requires: 64K, two disk drives.

Quontum Softwore Systems, Inc.
7219 Sheo Ct.
Son Jose, CA 95139
(408)629-9402

CPM-86 Operating System

290 A single-user operating system by Digital Research that manages information stored on diskettes and provides an interface between a program and the PC. CP/M-86 contains a full set of control and programming utilities. It includes programs that enable the user to create, erase, rename, and copy files. The user can also create, test, and run assembly language programs. Also supported are the IBM 80 CPS Matrix Printer, the Asynchronous Communications Adapter, Monochrome Display, and Color/Graphics Monitor Adapter, including light pen. Program development utilities include an editor, an assembler (ASM86), a debugging program (DDT86), and a program to produca command files. Existing CP/M-86 programs running on other computers must be converted to run on tha PC. *(List Price: $240, IBM Product Center prices)*
Requires: One disk drive, 32K, 48K for DDT86 program, 64K for ASM86.

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800)447-4700, 322-4400 Illinois
447-0890 Alasko, Hawoii

UCSD p-System (IBM)

291 An advanced operating system that includes either UCSD Pascal or FORTRAN-77 or both and comes with a file handler that integrates writing, assembling, compiling, editing, linking, and program execution functions. The complete UCSD p-System package includes a screen-oriented editor that runs in both programming and text-editing modes, a macro-assembler providing code that can be linked to FORTRAN or Pascal programs, and advanced turtlegraphics offering extended capabilities and graphic displays. Users have a choice between a Pascal or a FORTRAN compiler or both. A macro-assembler produces code, and a linker link-edits assembly code for either language. Other features include disk file handling capabilities, single keystroke commands, run-time support routines, block I/O service routines, and support for asynchronous processes. The UCSD p-System, with either FORTRAN-77 or UCSD Pascal, enables users to run programs already written in either language. *(List Price: UCSD p-System with Pascal $625, UCSD Pascal/FORTRAN compiler $175, UCSD p-System with FORTRAN-77 $625, IBM Product Center prices)*
Requires: 64K, two disk drives.

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800)447-4700 322-4400 Illinois
(800)447-0890 Alosko, Hawoii

1-DOS Operating System

292 An enhanced version of the PC-DOS operating system. It supports the manufacturer's PMS20 and PMS 40 hard disk drives, as well as CP/M and CP/M-86.

Under 1-DOS, CP/M and CP/M-86, compatible programs can be run on tha same disk drive without additional hardware. Included is a co-processor, 64K RAM, and a communications program that supports the Hayes and other RS-232 modems. Other applications software is also available. *(List Price: $350)*
Requires: One PMS 20 or PMS 40 hard disk drive, one floppy disk drive.

Professionol Micro Systems
4000 MocArthur Blvd. #3000
Newport Beoch, CA 92660
(714)851-8655
Telex: 182737
Source: CL0922

UTILITIES

Ultra-BASIC Translator

293 A program that allows users to write a highly structured BASIC source code. The translator will translate the source code program into BASIC. Features include labels up to 7 characters long; all BASIC commands and functions are allowed; complete defining of file structures is allowed; no FIELD, MKI, MKS, MKD, CVI, CVS, or CVD needed.

Complete source coda for the translator is provided so users can add commands if desired. *(List Price: $75 including 40-page monuol ond 5¼-inch disk)*
Requires: 64K, one disk drive.

Basic Business Softwore, Inc.
P.O. Box 26311
Los Vegos, NV 89126
(702) 876-9493

TYP/PRT

294 A program that uses a printer as a typawriter, retains any display already on video, makes notes from it, or copies it on the printer automatically. It can run concurrently with another program, and users can switch from one to the other at will. A six-function calculator is included. *(List Price: $24.95)*
Requires: 64K, one disk drive, printer.

Controct Service Associotes
706 S. Euclid
Anoheim, CA 92802
(714) 635-4055

Double-Precision Integer Arithmetic Package

295 A set of subroutines that can be called from IBM Pascal to provide accuracy for financial calculations and storing dates. Written in 8088 assembly language, the routines allow the conversion and representation of numbers as large as 2,147,483,647. The program gives Pascal users 32-bit accuracy instead of the 16 bits provided with the Pascal integer type, in which the largest number is 32,767. With double-precision, arithmetic amounts as high as 21,474,836.47 could be represented. Documentation on arithmetic and conversion routines is provided. *(List Price: $40)*
Requires: 48K, one disk drive.

Orgonizotionol Monogement Systems Inc.
7304 Kothydole Rd.
Baltimore, MD 21207
(301) 668-9011

PG FORTH

296 A screen editor, assembler, decompilar, dump, and miscellaneous utilities. *(List Price: $75)*

Requires: Not available

Worldwide Softwore Publishers
2555 Bueno Visto Way
Berkeley, CA 92708

Floppy Disk Librarian

297 A disk library program designed to keep track of floppy disks and files. It maintains a consolidated catalog where each entry for a disk or file name includes data, size, and any edded comments. It also shows what disks contain a particular file and what files are on a particular disk. The program footnotes files that do not have a backup. It provides a summary of how much free space is available on each disk. On-line help files and a user manual are available. *(List Price: $39.95)*

Requires: 64K, one disk drive, (printar optional).

Little Bit
469 Edgewood Ave.
New Haven, CT 06511
Source: TCE348

EM-80/86

298 An emulator that allows user programs written for systems using CP/M-80 to be executed on an 8086/8088 system after 8080 object files have been transferred to the target 8080/8088 system.

EM80/86 runs at operating system speed. Those programs that primarily interact with system peripherals will run at e speed equlvalent to the original 8080 system. Programs that ere computa bound (number crunchers) will execute significantly slower. *(List Price: Program and manual $200; program only, $190; manual only, $10)*

Requires: 16K, CP/M-86 or DOS.

Dynamic Microprocessor Associotes
545 Fifth Ave.
New York, NY 10017
(212) 687-7115

Print Screen, Graphics Editor

299 *Print Screen* extends the PrtSc key to print graphic screens on printers equipped with a Graftrax chip. It handles color by printing shades of gray. The *Graphics Editor*, e subset of the CODASYL standard, is a real-time program that allows editing of two- and three-dimansionel graphics images. It includes a character set definition utility. *(List Price: Print Screan $29.95 including disk and monual, Graphics Editor $129.95 including two disks and manuol)*

Requires: Not available.

C&C Software
54 Sonomo Ave.
Goleto, CA 93117
(805) 685-8802

FORTRAN Scientific Subroutine

300 A series of basic FORTRAN subroutines to aid users in generating their own FORTRAN meth library. The package contains a variety of subroutines to handle statistical analysis, matrix solutions, matrix manipuletion, function solutions, time series enelysis, frequency domain anelysis, chirp-z analysis, function evaluation, and intagration and diffarantiation.

Requires: 64K, one disk drive.

Alpho Computer Service
P.O. Box 2517
Cypress, CA 90630
(714) 894-6808

Compress

301 A file compression utility that compresses ASCII files to approximetaly 80 percent original size. A Huffman encoding algorithm is used to convert ASCII files to a packed binary format. Non-ASCII files such as .COM and .EXE files ara compressed by about 5 percent.

A 12K byte ASCII file is compressed to 7.5K in approximately 50 seconds and restored to its original form in epproximately 40 seconds. Use of a "ramdisk" program can shorten these times. The program is written in machine code and does not require en interpreter. *(List Price: $19.95)*

Requires: 48K, one disk drive.

Storside Engineering
P.O. Box 16306
Rochester, NY 14618
(716) 461-1027

Frieze

302 A program that takes a pattern on the PC graphics screen and saves it as a disk file or dumps it to an appropriate graphics printer. Written in assembly languaga and loaded at power-up time, the program remains in memory below the operating system until power-down, or reboot.

The program redafines the Print Screen key for graphics. If more than one screen has been stored on disk, *Frieze* expects a third keypress of a digit from 1 to 9 to indicate which screen is being handled. Error conditions are indicated by coded beep sequences from the PC speakar. It supports the Epson series with Graphtrax and the IDS series with graphics option printers. *Frieze* can run with eny applicotion program running under DOS, including BASIC and IBM Pascal. *(List Price: $55)*

Requires: 46K, one disk drive, Epson or IBM printer with Graftrax or IDS printer with graphics option.

Storside Engineering
P.O. Box 18306
Rochester, NY 14618
(716) 461-1027

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VISA

MicroWare P.O. Box 79 Kingston, MA 02364 (617) 746-7341

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UTILITIES

DS-Disk

303 A program that provides twice the memory of a single-sided disk driva. Data is stored on the disk's unused sida, increasing storage capaclty from 160K to 320K per drive. Writtan in machine language, the program is compatible with singla-sided disks for both reading and writing, and provides 324K of formatted space per disk. The program can be called from DOS, and all internal DOS and BASIC commands remain the same. *(List Price: $40)*

Requires: One disk drive, (other requirements not available).

PC²
1250 Ookmeod Pkwy.
P.O. Box 678
Sunnyvale, CA 94086
(408) 749-9313

Screen-Formatter

304 A utllity that merges BASIC into the user program to displey full-screan input formet as protected information. Data mey be antered by filling in blanks. *(List Price: $35)*

Requires: 18K, ona disk drive.

PC-Logic Systems
990 Washington St., Dept. 327
Dedham, MA 02028
(617) 329-7900

FABS/PC (Fast Access B-tree Structure)

305 An 8086/8088 assembly language subroutine that provides rapid access to a very large data base. The balanced multipath tree structure is key sequential, and the keys never need resequancing. Features include simultaneous opening of up to six key files, a key file independent of the data fila, deleted data records that may be recleimed by new inserts, error handling, and support for variable length keys. ASCII keys can be specifled (greater than 50 bytes) or integer keys (0 to 85535) can be specified to occupy 2 bytes in the trea. *(List Price: $150 including monual with test ond demonstrotion programs)*

Requires: 64K, two disk drives.

Computer Control Systems
298 21st Terrace S.E.
Largo, FL 33541
(813) 586-1886

Diagnostics II

306 A complete package designed to check every eraa of a computer, detect arrors, and find the causes of most common computer malfunctions. *(List Price: $125; monuol only, $15)*

Requires: 32K, two disk drives, CP/M-86 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Chompaign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

DiskLook, SecMod, UnErase

307 *DiskLook* is a full-featured disk display routine that shows directory information, full-sector displays, file locations, and space utilization. *SecMod* reads and changes any disk sector in either hexadecimal or character mode. It can be used to patch or modify disks or repair damaged disks. *UnErase* recovers files lost due to erasure or damage to disk and recovers erased files even if partly overwritten. *(List Price: $20 each)*

Requires: 64K, one disk drive, 80-column monitor.

Peter Norton
1716 Moin St.
Venice, CA 90291
(213) 399-3948

Electronic Disk

308 Software that permits tha use of extended capacity disk drives and allows RAM to be used as an electronic disk drive. The Tandon TM100-2 doubla-sided drive or the Tendon TM100-4 quad drive or equivalents can be used. Installation does not require any change to the disk controller, cable, or drive itself. The program creates the equivalent of a disk drive in the user's extra RAM. *(List Price: $69.95)*

Requires: 128K, ona disk drive.

Ensign Software
2312 N. Cole Rd., Ste. E
Boise, ID 83704
(208) 378-8086

Screen Dump for Epson Printer

309 A machine language program that permlts hard copy and colored printouts of screen content on the Epson MX-80 or the Graftrax MX-100 printer. The program replaces the current Print Screen function end ellows images to be printed upright or rotated 90 degrees. It elso allows the entire PC special character set and eny text and graphics in the medlum- and high-resolution graphics modes to be dumped to elther printar.

Six colors are available, including black end white end reversed black end white versions. The program does not affect normel operation of the PC. *(List Price: $49.95)*

Requires: I.D.S. Prism 80- or 132- column printer with dot and color options.

M.A.P. Systems Inc.
1120 NASA Rood One #444
Houston, TX 77058
(713) 333-9640

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UTILITIES

Pascal Application Development Tools

310 Three integrated packages of Pascal tools designed for professional users. The programs are a series of routines written in IBM (Microsoft) Pascal, which provide system developers with the procedures required to produce user-oriented applications software written in IBM Pascal. Because source code is distributed with the package, the system also provides an introduction to some advanced features of IBM Pascal.

Intrinsics consists of many common arithmetic and logic functions, and procedures required in a development environment, are not supported by Pascal. String Function manipulates routines that extend the limited-string capability of Pascal. *Application Library* consists of a series of functions and procedures likely to be used within user-oriented programs. Command line parsing and screen handling procedures are provided.

Interface, implementation, object files, and source code are distributed on a standard IBM floppy disk. Reference material for the package is provided so it can be inserted into the Pascal manual. A user manual with examples and systems documentation is also provided. *(List Price: $95 including documentation and source code)*

Requires: 128K, two disk drives, IBM Pascal.

Bloise Computing Inc.
1465 17th Ave.
San Francisco, CA 94122
(415) 665-4711

Print-Graf

311 A series of programs to provide printouts of medium- or high-resolution graphics on an IBM dot matrix printer or Epson MX-80 or MX-100 printer with Epson Graftrax PROMs. The primary program, written in machine language, allows the selection of alternate printing options, and positive or negative images on paper. The series also includes a program that creates high-resolution bar charts or graphs. *(List Price: $79.50 including user manual, $149.50 with Graftrox PROMs)*

Requires: 48K, color/graphics adapter, one disk drive, IBM dot matrix printer.

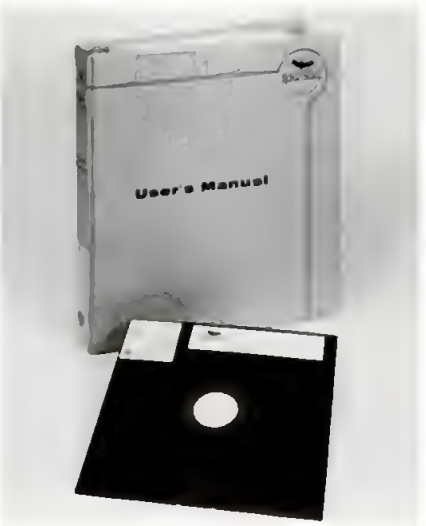
Micro-Z Electronic Systems
P.O. Box 2426
Rolling Hills, CA 90274
(213) 377-1640

Screen Print

312 A machine language-based program that replaces the PC Print Screen function. It provides hard copy output of screens and produces upright, 90-degree rotated, and double-expanded upright images. Four colors are available on the medium-resolution graphics screen in four levels of black and white shading. *(List Price: $44.95)*

Requires: Epson or IBM printer with Graftrax.

M.A.P. Systems Inc.
1120 NASA Road One #444
Houston, TX 77058
(713) 333-9640



Condon Series 20, Condon Computer Corp.

Quikprnt, Scrnprnt, Prntparm

313 *Quikprnt* and *Scrnprnt* are software additions to DOS. *Prntparm* modifies the parameters used in the other programs.

Quikprnt prints information that appears on the monochrome display to a printer attached to the RS-232 serial interface. The program prints neither blanks at the end of the line nor blank lines. The program is automatically added to the system resident code, and once loaded into the system it does not need reloading. *Scrnprnt* prints the entire screen, including blanks at the end of each line and blank lines.

Prntparm personalizes *Scrnprnt* and *Quikprnt* to the printer's parameters. The baud rate, number of stop and data bits, and the parity parameter may be specified for the user's system. All programs are available on a single disk. *(List Price: $39.95)*

Requires: 16K, one disk drive, asynchronous communications adapter, printer connected to serial interface.

Prosoft Inc.
16920 Ookridge Ln.
Morgan Hill, CA 95037
(408) 287-6900

Files, List, Dump, Hex, Sector, Browse

314 A group of programs supplied on disk. *Files* displays all file names from one drive on the screen at one time in three sorted columns. *List* is used with a serial printer, the Print-Screen key, and the BASIC LPRINT command. *Dump* displays contents of files on the screen in numbered data blocks in program hex and ASCII, giving relative addressable byte. *Hex* enables the user to step through a file or randomly display file contents, one sector at a time in hex and ASCII. *Sector* displays any sector on any disk, including the directory and other sectors reserved by the operating system. *Browse* allows the user to roam through files, navigating with function keys. Full screens of data are displayed. *(List Price: First program $20, each additional program $5)*

Requires: 48K, one disk drive.

The Software House
P.O. Box 112
Citrus Heights, CA 95610

ProGraph

315 A program that sends any combination of graphics and text to the printer using the PrtSc key. It converts color graphics to gray-scale or to user-defined crosshatches or textures. It allows users to PrtSc a screen to a file through either the keystroke or a procedure call for software control. The program includes a concurrent spooler for both text and graphics screens and files. *(List Price: $75)*

Requires: Epson printer with Graftrax, (other requirements not available).

ProSoft
P.O. Box 5850
Seattle, WA 98105
(206) 522-6552

Type Faces

316 A printing tool that enhances the capabilities of the dot matrix printer by adding 15 different type styles and over 100 symbols to the standard character set. Printouts can be reduced for letter quality text or copied onto acetate for overhead projector presentations. *Type Faces* comes with a text editor and is compatible with DOS files and most word processors. An instructional tape accompanies the program. *(List Price: $95)*

Requires: 64K, two disk drives, color/graphics adapter, IBM printer with Graftrax.

Alpha Software Corp.
6 New England Executive Park
Burlington, MA 01803
(617) 229-2924

UTILITIES

TimeMark, FileHide

317 *TimeMark* is a batch utility program that displays the current date in ideal format and computes and displays the elapsed running time of application programs. *FileHide* sets files to hiddan, system, or normal status for hiding or erase-protecting files and revealing hidden files. *(List Price:* TimeMark *$5,* FilaHide *$10)*

Requires: 64K, one disk drive, 80-column monitor.

Peter Norton
1716 Moin St.
Venice, CA 90291
(213) 399-3948

PrtSc (Print Screen)

319 A program that enhances the screen print facility of tha PC. The PC displays 254 different charactars in text mode and a wida variaty of shapes and forms in graphics mode. By using the PrtSc key, users can generate printed copies of any screen. Screan images may then be saved on disk for printing or viewing. *(List Price: $65)*

Requires: 48K; one disk drive; IBM printer with Graftrax, or Epson printer.

Rodio Technology
8 N. Main St. #111
West Hortford, CT 06107
(203) 232-9974

CopyPC

321 A utility that allows users to bac up many copy-protected program including *VisiCalc* and *EasyWriter*. It also allows users to recover usable data from a damaged disk. *(List Price: $34.95)*

Requires: 48K, one disk drive.

Nogy Systems
4711 Geary Blvd. #231
San Francisco, CA 94118
(415) 751-2233

ProPrint

322 An onboard print spooler that installs itself in memory and feed text to tha printar as needed. Files are move from disk to memory to printer concurrently with othar tasks, allowing the printar to wor without delay while performing other functions. *ProPrint* spools a queue of files o any length. The queue can be modified with text editor. *(List Price: $50)*

Requires: 64K, one disk drive, parallal printe

ProSoft
P.O. Box 5850
Seattle, WA 98105
(206) 522-6552

Pick'n'Pack

323 Two utility programs for tha IBM BASIC programmer. *Pick-o-men* writes IBM BASIC code to display e menu, collect and check menu command choices, an branch to the proper line numbers that execu menu choices. Parameters for writing menu can be saved for latar editing or additions. Th *Pick-o-menu*-produced code can merge wit the user's own programs to avoid repetitious menu coding.

Pock'r takes en IBM BASIC program an eliminates REMark statements, packs as man lines together as possible, produces en option REMark file that documents the program, an saves the newly packed version to disk.

Both programs are provided on one disk. Varsions for both 40-column and 80-column screens ere supplied. Working varsions of eac program have been packed, and fully REMarked versions of each program are als provided. Access to all programs is through master menu. *(List Price: $29.95)*

Requires: 48K, one disk driva.

Jaseki Computer Corporation
2604 Artesio Blvd. #5
Redondo Beoch, CA 90278
(213) 374-3251

Expansion Chassis with Winchester 5MB ar 10MB Disk Drive, *Tecmor, Inc.*

Videograph 88

318 A graphics print routina that transfers high- or medium-resolution graphics images from the screen to an IBM or Epson printer. It works with any amount of memory and creates printouts of graphics displays using automatic color shading. *(List Price: $59.95)*

Requires: 48K, one disk drive, color/graphics adapter, Epson or IBM printer with Graftrax.

Windmill Software
1058 Joan Dr.
Burlington, Ontorio
Conada L7T 3H2
(416) 632-6279

Jools

320 A package of 16 tools that allows manipulation and rearrangement of fixed or variable length taxt. Vsort and Rearrange let the user sort and raarrange fields, while Salect, Find, and Replace extract, search, and replace text within a fila. *(List Price: $95; monuol only, $20)*

Requires: 128K, two disk drives.

Pluto Reseorch Group
P.O. Box 50444
Polo Alto, CA 94303
(415) 323-5654

PC General Utilities

324 A utilities package written in BASIC that includes a cross-reference generator, mailing list program, label generator, and print formatter. *(List Price: $29.95)*

Requires. 84K, color/graphics adapter, (printer optional).

PCsoftwore
4155 Clevelond Ave.
Son Diego, CA 92103

Cross Reference

325 A program that lists a user's BASIC program and prints all tha variables used in the program. Line numbers following each variable are the lines on which the variabla is used. The program cross-references all line referencing statements such as GOTO, GOSUB, ON-GOTO, ON-GOSUB, IF-THEN-ELSE, and RESTORE. Users detarmlna whether a line number is referenced by another part of the program. Listings can be sent to the screen, an IBM parallal printar, or a serial printer.
(List Price: $24.95)

Requires: 48K, one disk drive.

Ensign Software
2312 N. Cole Rd., Ste. E
Boise, ID 83704
(208) 378-8086

System Checker

326 A diagnostic program that allows users to check their entire computer system with minimal interaction. It is dasigned for peopla with no knowledge of computar hardwara. Fiva areas of a computar systam are tested undar tha program. *(List Price: $75; manual only, $15)*

Requires: 32K, one disk driva, CP/M-86 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Chompaign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

System-Backup

327 A utility program that makes backup copies of any disk regardless of sector size and track format used. The utility recovers from sector errors when one is found and will copy with either one drive or two. *(List Price: $50)*

Requires: 32K, one disk drive.

Norell Dato Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

XF-Dump

328 A general-purpose disk utillty that allows users to display, print, and alter the contents of any fila or sector. Each record is displayed in both its character and hexadecimal representation. *(List Price: $70)*

Requires: 64K, (other requirements not available).

Distributed Software Systems, Inc.
P.O. Box 1301
Northbrook, IL 60062
(312) 634-1511

Lazycoder Screen

329 A program that provides interactive screan design capability. Tha screen is craated by positioning tha cursor and using 25 additional design features. The program is writtan in commented BASIC. *(List Price: $90)*

Requires: 64K, one disk driva.

Nelson Doto Resources, Inc.
900 S. 74th Plaza #118
Omaho, NB 68114
(402) 397-3030

MM64SW-1 Memory Test Program

330 A disk-based program that exercises any mamory in tha expansion chassis. Error logging is included. Diagnostics and a manual assist in isolating memory problems to tha chip level. *(List Price: $19.95)*

Requires: 96K, (other requirements not available).

Micro Match
10343 Commerce Ave.
Tujungo, CA 90142
(213) 353-5929

MXREF

331 A cross-raference program designed to work on programs written in Microsoft BASIC. This tool aids in the debugging, modification, conversion, and documentation phases of software development. Program variables, functions, key words, strings, constants, and line numbers referenced are listed in alphabetical ascending order. The listings produced aid programmers in identifying all references to particular lina numbers or variables. Up to 1,000 variable names can be referenced. *(List Price: $96 including monual ond disk; manual only, $15)*

Requires: 64K, ona disk driva.

Computer Toolbox, Inc.
1325 E. Main St.
Waterbury, CT 06705
(203) 754-4197

ScreenPro

332 A BASIC programming languaga subroutine that enables users to develop professional screen-oriented dialogues. Over 20 options allow comprehansive screan prompting. All PC cursor control keys are handled, plus custom coding of tha tan function keys. *(List Price: $32)*

Requires: 48K, one disk driva.

New Venture Systems
P.O. Box 2141
Chesapeake, VA 23320
(804) 482-1889

MacroP

333 A general-purpose macroprocessor that allows users to extend their document formatter or language processor. MocroP can convert assemblers into macroassemblers, add long variable names, perform compila-time expression avaluations, and add conditional nested inclusion of text files. The package comes with files of macros for BASIC, Pascal, and PL/I programmers, and Textwriter document formatters. *(List Price: $135; monuol only, $20)*

Requires: 58K, one disk drive.

Pluto Reseorch Group
P.O. Box 50444
Polo Alto, CA 94303
(415) 323-5654

Automatic Screen Design Aid

334 A menu-driven automatic screen design aid that allows users to lay out a screen on a CRT with any attribute. It generates BASIC code. *(List Price: $99)*

Requires: 48K, one disk driva.

Softmork Inc.
446 Coloniol Ave.
Layton, UT 84041
(801) 546-2000

Pack and Crypt

335 A two-program package that saves disk space and provides security for sensitive data. Pock uses Huffman coding to compress files and saves 25 to 50 percent on text and program source. Crypt takes a user-provided password to protect files against unauthorized raaders. The program is written in C language. *(List Price: $49.95)*

Requires: 64K, one disk driva.

Norell Dato Systems Corporation
3400 Wilshire Blvd.
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Los Angeles, CA 90010
(213) 257-2026

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UTILITIES

PFAS

336 A portable ISAM with a set of routines written in Pascal, permitting programmers to access data/records by a primary key and any number of secondary keys. The program supports the standard I/O functions of an ISAM, including initializing indexes, reading and updating records randomly by primary or secondary keys, reading records sequentially or reverse sequentially by key, and adding or deleting records by key.

Tha program also supports veriable length records, reading records by partial key, recovery of space whan records are deleted, and getting the key from the index. The indexed file implemented by *PFAS* is a B-tree, which ensures retrieval, insertion, and deletion of records without file reorganization. *(List Price: $200)*

Requires: Two disk drives, UCSD p-System or DOS, (other requirements not available).

Gryphon Systems
P.O. Box 755
Cordiff by the Seo, CA 92007
(714) 436-1455
Telex: 499-0529

COBOL Programming Tools

337 Three visual programming tools for programmers working with COBOL. *Animotor* displays the source code on the screen with the cursor moving from statement to statement as the execution proceeds. This allows the user to follow the logic of a program, and it eases the task of debugging.

Slideshow allows tha user to creete visual aids, such as menus, text slides, and still or moving graphics slides. These visual aids can be linked to an applications program, and batch-oriented applications can be made interactive.

Forms-2 automatically genarates tha source code required for screen handling. As the user "paints" the screen, the program generates standard record description statements that can be copied in an application program. *(List Price: Animator $425, Slideshow ond Forms-2 $200 each)*

Requires: 64K, two disk drives, CP/M-86, CIS COBOL.

Micro Focus
1601 Civic Center Dr.
Sonto Cloro, CA 95050
(408) 496-0176

PhosForm

338 *A* software utility that consists of a screen editor and a set of screen input routines. The screen editor is used to custom design forms to fit individual needs. While users design the form, they can change form headings and move and reorder information. In designing the form the programmer sees what tha user of the program will see on the terminel. The screen editor also prints out a copy of the finished form. *(List Price: $95)*

Requires: 16K, two disk drives.

Gryphon Systems
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ProEdit

339 A full-screen editor with horizontal and vertical scrolling that can edit any ASCII fila. Edlting functions can be executed with one or two keystrokes. *(List Price: $50)*

Requires: 48K, one disk drive.

ProActive Systems Corporation
505 Chonning Ave.
Polo Alto, CA 94301
(415) 326-2722

FPRINT

340 A BASIC program that prints DOS text files formatted as separate paga output. It documents program source files created with BASIC or EDLIN editors, or any othar DOS ASCII files. *(List Price: $5.95)*

Requires: 48K, parallel printer, (othar requirements not availabla).

Mouseworks Computing
151 Gemini Ave.
Lompoc, CA 93436

Perfect Companion Conversation Control

341 A utility that handles the intaraction between the user, keyboard, end scraan. It acts as an intelligent intarface, passing input and output from the screan and keyboard back and forth to the application program. Screan control, keyboard control, field control, and command control are provided, and all DOS languages ere supported. *(List Price: $220)*

Requires: 32K, two disk drives.

Softwore Innovotions, Inc.
5505 Bloir Ooks, Box 74815
Lewisville, TX 75056
(214) 370-8601

BASIC Program Cross-Referencer

342 A program devalopment and documentation tool that locatas users' variable names by line number, sorts them alphabetically, end prints tham following the program listing. *(List Price: $30)*

Requires: 128K, one disk drive, printer.

A. Eric Eastmon
620 W. 1950 North
West Bountiful, UT 84087
(801) 292-0664

Double-Density Disk Writer

343 A program that doubles disk capacity by storing data on tha unused side. Language programs convart standard DOS disk to double-sided format and allow the user to tailor DOS for any drive set-up. *(List Price: $40)*

Requires: Tandon TM 100-2 disk drives, (othar requirements not available).

Dotamoc Computer Systems
680 Almonor Ave.
Sunnyvole, CA 94086
(408) 735-0323

ProSort

344 A utility that sorts up to eight files using specified parameters and merges them into a single output file using a polyphase binary tree insertion sort. The program is written in Pascal. *(List Price: $75)*

Requires: 48K, ona disk drive.

ProActive Systems Corporation
505 Chonning Ave.
Palo Alto, CA 94301
(415) 326-2722

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UTILITIES

ProLog

345 A program that has up to 512 file directories per disk. It includes file-protect, read-only, privacy, long names, and subdirectory comands. Other features include definable directory fields, automatic backup of important files, and the ability to manage simultaneous requests for file access. Directories can extand over several devices, many directories can be entered on one device, and files can appear in multiple directories. Interactive full-screen directory raports include multiple sorts, in-time windows, on-file names, extensions, and user-defined date and time fields. *(List Price: $75)*
Requires: One disk drive, (other requirements not available).

ProSoft
P.O. Box 5850
Seattle, WA 98105
(206) 522-6552

Disk Magic

346 An interactive disk-patcher utility that lets users make system patches and repair damaged data. It combines two-dimensional screen interaction and allows full-screen display of disk records by absolute sector numbar. Data can be displayad in hex or ASCII. The program is writtan in assembly language. *(List Price: $49.95)*
Requires: 64K, one disk drive, printer.

Norell Data Systems Corp.
8400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

Screen Machine

347 A series of external routines enabling users of Pascal, FORTRAN, COBOL, end assembly languages to perform high-speed screen manipulations. Cursor positioning, scrolling, erasing, and text handling are all facilitated.

It emulates a 160-column by 25-line display. A 40- or 80-column physical screen can be "slid" left and right over the virtual screen (160x25). Users can define up to nine subscreens, termed blocks. Text may be manipulated in each of these subscreens independently. The program can also function with a color card adapter in 80-column mode. *(List Price: $49.95)*
Requires: 64K with assembly and COBOL, 128K with Pascal and FORTRAN; one disk drive.

Omric Corporotion
1268 Main St. #207
Newington, CT 06111
(203) 666-4240

ISAM-BASIC

348 A set of subroutines in an application program that controls random data files. Tha program utilizes the routines by issuing GOSUB statamants with control variables previously set to indicate the appropriate action. The subroutines are recorded on disk in ASCII format so the user can merge them with any number of application programs.

Combined, the subroutines make up an access method for disk files. The access method has several characteristics that simplify the programming effort required to utilize random disk files effectivaly. *ISAM* is implemented in *BASIC*, and source code is available for *BASIC*. *(List Price: BASIC $90, machine language $140)*
Requires: 64K, one disk drive.

Johnson Associates Software
P.O. Box 3069
Redding, CA 96049
(916) 221-0740

PascalSET

349 Three tools—*PTroce*, *PMacro*, end *PAdapt*—for writing, debugging, and maintaining production-quality Pascal programs. *PTroce* provides users with a report containing information about the behavior of a Pascal program as it runs. Tha report automatically traces the progress of a program through all its routines and shows current values of input and output parameters and global variables used by aach procedure.

Tracing may ba selective and triggered by program avants. A summary activity count showing the number of uses of each routine is also provided.

PMacro provides a macro dafinition capability for abbreviation and standardization of complex programming sequences. It also provides sevaral mechanisms for maintaining and controliing variations of a program within a single copy of the source.

PAdapt accepts a variety of *Ada*-style extensions to the Pascal language and translates these into standard Pascal. The "exception handling" extension is an approach to handling special conditions such as arroneous program inputs. All extensions are translated into standard Pascal. Products are available undar licanse agraemants. *(List Price: Not available)*
Requires: *PTroce* requires a run-time package provided by the manufacturer, (other requirements not available).

First Systems Corporotion
865 Manhattan Beach Blvd.
Manhattan Beach, CA 90266
(213) 546-5581

Screengen IV

350 Creates a *BASIC* program to recreata any user-keyed screen design. Function keys can be set to any displayable character: Normal, intensified, blinking, underline, and reverse image can be turned on or off anywhere on the screen. Insert and delete keys ara supported. *(List Price: $60)*
Requires: 48K, one disk drive.

Fogle Computing Corporotion
P.O. Box 5166
Sportanburg, SC 29304
(803) 574-4950

PC/Format

351 Software that allows creation of screen formats. It includes user-callable subroutines that control all screen and keyboard I/O. Supported by FORTRAN, Pascal, and BASIC. *(List Price: $99)*
Requires: 64K, one disk drive.

Micro Express
3857 Birch St. #109
Newport Beach, CA 92660
(714) 859-7575

UT-86

352 Four utility programs that provide functions or features not available with existing 8086 utilities. Copy*file* creates copies of existing files on tha same or a different disk, optionally changing the file names. Copy*file* can display each file nama copied and optionally prompt operators before the file is copied.

D provides a sorted full or partial directory of fiies on disk, indicating file size in K-bytes. It gives a summary of space usage on the disk selected and includes hidden or system files.

Patch is an extensiva fila examination/modification utility program, a command-oriented program with a complete on-line Help facility. Records can be fatched, modified in hexadecimal or ASCII, or filled with fixed values. It is configurable for operation on various terminals through another command. Files can be opened, closed, typed, renamed, arased, or searched for specific strings.

Print is a genaral purpose file print utility. It can print multiple files using many user-specified options. Page height, usable lines/page left margin width, tab expansion width, parity strip, and page haadings. Printouts may include line numbers, and the user may request print prompt before each file is printed. *(List Price: Program and manual $180; program only, $160; manual only, $20)*
Requires: One disk drive, (other requirements not available).

Dynamic Microprocessor Associates
545 Fifth Ave.
New York, NY 10017
(212) 687-7115

UTILITIES

Helpware

353 An interactive, integrated user interface for DOS that provides file creation, display, editing, copying, and printing, and is based on an updated display listing files stored on on-line disks. *(List Price: $195)*

Requires: 64K, one disk drive.

SoftWorkers of Texas
12606 Greenville Ave. #100
Dallas, TX 75243
(214) 690-0595

OMS Utilities Package

354 A utilities package that provides the PC user with control utilities. The package switches system operations from monochrome to color monitor and vice versa, opens communication channels, speads up floppy disk access time, works with VisiCalc, and sets tabs on Epson and NEC printers. Full source and executable codes are providad with the program package. *(List Price: $25)*

Requires: 64K, one disk drive.

Orgonizotionol Monogement System, Inc.
7304 Kothydole Rd.
Boltimore, MD 21207
(301) 668-9011

PC256 Printer Expansion Program

355 An assembly language program that allows the entire IBM character set (255 characters) to be printed on the Epson MX-80, MX-100, or IBM printer with Graftrax-80 option. Every character displayed by the IBM monochrome monitor can be printed. It operates with BASIC, Pascal, and assembly language, as well as the screen print function. The program allows the user to redefine any scraen character. *(List Price: $25)*

Requires: 64K, one disk drive, Epson or IBM printer.

Crest Enterprises
909 N. Son Antonio Rd.
Los Altos, CA 94022
(415) 948-4948

Hotline

356 A self-prompting, intelligent terminal program that enables users to transfer files between the PC and anothar computer. *(List Price: $40)*

Requires: 64K, one disk drive, asynchronous communications adapter, modem.

Cottfried Associotes
129 Old Suffolk Dr.
Monroeville, PA 15146
(412) 373-0425

PC-Mate Speed Disk

357 A program that simulates a floppy disk using Tecmar's PC-Mate dynamic RAM. The result of the simulation is a logical disk device compatible with normal system operations that provides speed increases between 5 and 50 times that of the IBM minifloppies, depending on the type of operation performed. This option is available with PC-Mate Dynamic RAM option only. *(List Price: $95)*

Requires: 192K, one disk drive.

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

TRS-80 to IBM File Transfer Program

358 A package that allows the transfer of files from the Radio Shack system to the IBM PC. Communication programs for both systems are included. Also included is an adapter that allows the two systems to connact, and a test communication fila that verifies correct connection and proper transmission. File concatenation is provided as well as the ability to send files of any langth. Supported baud rates are *110, 150, 300, 600, 1200, 2400, 4800,* and *9600. (List Price: $40)*

Requires: RS-232 adapter and ona disk drive on TRS-80, asynchronous adaptar and one disk drive on IBM.

Personol Computer Products
1400 Colemon Ave., Ste. C-18
Sonto Clora, CA 95050
(408) 988-0164

ProKey

359 A keyboard anhancer that resembles BASIC's soft keys. Each key is set to type any character sequence automatically. Sequences longer than one line can be used and sequences can be changed at any time without leaving the activa task. The program can be bulk loaded with user-defined strings. It can also be used by software authors to program vector interrupts to entry points in Pascal (and other) programs for possible keystrokes. It allows Pascal, FORTRAN, COBOL, and BASIC programs to call for advanced keyboard I/O, operating system service, and interrupts. *(List Price: ProKey $39.95, OEM packoge including MASM symbolics $100)*

Requires: 48K, one disk drive.

ProSoft
P.O. Box 5850
Seattle, WA 98105
(208) 522-6552

AST-3780

360 An emulation packaga that includes the AST CC-232 Advanced Communication Card (a synchronous communication card). It allows the PC to emulate the *2780/3780* tarminal by transferring files with IBM mainframe computers using bisynchronous protocol. *(List Price: $945 including AST CC-232 Advonced Communicotion Cord; cord only, $295)*

Requires: 48K, one disk driva.

AST Reseorch, Inc.
2691 Richter Ave. #104
Irvine, CA 92714
(714) 540-1333

LoadCalc

361 A system that converts virtually any text file into a VisiCalc (DIF) file for use with VisiCalc, VisiTrend/Plot, and other VisiSeries systems. It converts files from mainframes, time-sharing systams, othar personal computers, and data from software packages that do not produca DIF files but save data on disks as text files. Fractions are converted to decimals during interchange. It allows selective conversion by row and column, so only desired data is obtained. Each field is analyzed and saved as aither a label or a value in a DIF file. *(List Price: $95)*

Requires: 64K, one disk drive.

Cypher
121 Second St.
Son Froncisco, CA 94105
(415) 974-5297

OMS Pascal Screen Unit

362 A set of procedures that can be called from any Pascal program. The procedures can control the cursor, write messages in any video mode, clear the scraen, draw boxes, and get single characters from the keyboard including special characters and function keys.

Three sets of routines are provided on disk. They support the IBM monochroma monitor or equivalent on an RGB color monitor or a standard color television or equivalent. Full documentation is included featuring explanation of routines, using the SCRN unit, and linking the programs. *(List Price: $45)*

Requires: 48K, ona disk drive.

Orgonizotionol Monogement Systems Inc.
7304 Kothydole Rd.
Boltimore, MD 21207
(301) 668-9011

RamSpooler

363 A RAM-based printer spooler that buffers data to be sent to the printer. It leaves the PC free to perform other tasks while the data is transmitted at high speed to the printer. It sets up a true foreground/background environment. *(List Price: $95)*
Requires: 64K, one disk drive, PC-Mate Dynamic RAM option.

Tecmor Inc.
23600 Mercantile Rd.
Cleveland, OH 44122
(216) 464-7410
Telex: 241735

Speech Master Software Support Package

364 A software support package that offers a complete text to speech ability with inflections. Printer type output can direct the speech, providing the text to be spoken. A special code also provides a screen to voice function, making the screen correspond to the SpeechMaster output. *(List Price: $95)*
Requires: 64K, one disk drive.

Tecmor Inc.
23600 Mercantile Rd.
Cleveland, OH 44122
(216) 464-7410
Telex: 241735

CodeSmith-86

365 A programming aid that provides full-screen debugging capability with built-in screen editing features. It allows definition of precise conditions that will halt the execution of programs being tested, and displays memory locations during program execution. It performs full-screen disassembly listings from memory contents that may be single-stepped through, and allows setting of hundreds of breakpoints with one function key, as well as supporting a split-screen mode in which the source program can be displayed, scrolled through, and edited while debugging is in progress. Simplified assembly language instructions are patches to disassembled code on display. *(List Price: $145 including manual)*
Requires: 96K, one disk drive.

Visual Age
642 N. Larchmont Blvd.
Los Angeles, CA 90004
(213) 464-8141

Chartdif, Plotdif

366 Two utility programs designed for users of electronic spreadsheets. The utilities interpret data files in Data Interchange Format (DIF) and create graphic charts of the data. Because DIF data is flexible enough to record and retrieve, the programs employ the same flexibility in creating graphs. The *Chartdif* program was designed to sense the type of display activated and produce a two-dimensional bar chart. *Plotdif* creates three-dimensional spreadsheets.

Both programs are sold together on a single-sided, 5¼-inch floppy disk. Programs include documentation, a menu-driven demonstration, and sample data files. *(List Price: $75)*
Requires: 48K, one disk drive, color/graphics adapter, VisiCalc.

The Consultant
414 Con-Doto
Mt. Prospect, IL 60056
(312) 259-7224

Autosort/86M

367 A program that functions as a high-speed assembly language sort/merge/select module, called as a subroutine from IBM BASIC. Sort parameters can be specified during run-time, and the program permits records of 5,000 bytes. The program sorts/selects on string, integer, and single- or double-precision fields. It sorts on ten keys, independently, ascending, or descending, and deletes/retains records, comparing up to four independent select keys. The program includes prompted disk change capability for work and output files and can be incorporated into existing programs. *(List Price: $150)*
Requires: 64K, two disk drives.

Computer Control Systems, Inc.
298 21st Terrace S.E.
Largo, FL 33541
(813) 586-1886

Cross Reference (N.F. Systems)

368 An indexing program that cross-references BASIC programs and gives a list of subroutines, variables, constants, and functions. It is useful for BASIC programmers. *(List Price: $34.95)*
Requires: 64K, one disk drive, (printer optional).

N.F. Systems, Ltd.
P.O. Box 76363
Atlanta, GA 30358
(404) 252-3302
Source: TCK071

Sort Subroutine

369 A sort subroutine callable from a BASIC program that sorts records in ascending or descending order. *(List Price: $24.95)*
Requires: 64K, one or two disk drives.

N.F. Systems, Ltd.
P.O. Box 76363
Atlanta, GA 30358
(404) 252-3302
Source: TCK071

Serial Printer Program

370 An easy-to-use program that allows the IBM PC to send files to a serial printer. It supports line widths, basic formatting, paging, and form handling. Included is a manual and a translation table for customization. Supported baud rates are 75, 110, 150, 300, 600, 1200, 1800, 2400, 4800, and 9600. *(List Price: $40)*
Requires: 64K, one disk drive, asynchronous communications adapter.

Personal Computer Products
1400 Coleman Ave., Ste. C-18
Santa Clara, CA 95050
(408) 988-0164

IBM BASIC Utilities

371 A software package that provides subroutines for IBM BASIC programs. An Input routine edits input, character by character, to make sure it is the correct type, and then formats and displays the entry, or displays an error message. Matrix routines handle matrix input, inverse, and multiplications. Also provided are a file search subroutine, a subroutine to draw boxes and lines on the screen, and a miniature full-screen text editor. A utility can cross-reference all variables and line numbers in a BASIC program, reserved words, and branching. *(List Price: $75, including an 80-page user manual)*
Requires: 64K, one disk drive.

Basic Business Software, Inc.
P.O. Box 26311
Las Vegas, NV 89126
(702) 876-9493

Repair

372 A utility that enables the user to repair floppy disks. The program can copy a file on a floppy disk by track or by sector; set files to hidden, system, or normal status; show hidden or erased files; and add or change a directory. An all-purpose program that is independent of IBM DOS, it runs with double-density, and single- or double-sided disk drives. *(List Price: $59.95)*
Requires: 48K, one disk drive, (printer optional).

Squire, Buresh Associates, Inc.
4 E. Central St. #2029
Worcester, MA 01613
(617) 832-6430

UTILITIES

8087 High-Speed Math Package

373 A disk-based software package containing all the programs required to use the Intel *8087*. The programs are written in assembly language, and source code is included. The *8087* programs are written in two forms: One set is Macro files and the other set is callable routines. *(List Price: $95 including documentotion)*
Requires: 64K, one disk drive.

Micro Motch
10343 Commerce Ave.
Tujungo, CA 91042
(213) 353-5929

Screen-Master

374 Software that defines defaults and genarates screen input format. Tha maximum key length is *30* characters, and special handling routines are available for each field using GOSUB commands. Features include table searching and handling, date checking, and general title formatting. *(List Price: $100)*
Requires: 48K, one disk drive.

Softwore Masters
6704 Hoover Rd.
Indianapolis, IN 46260
(317) 259-7892

Emulator/86

375 An emulator that allows users to run *CP/M-86* softwara under DOS. Purchasers can use a DOS editor to write a program, compile it under a CP/M-86 compiler, and execute the finished application under DOS. Programs that run under Emulator/86 benefit from such DOS features as large file size, dated directory displays, and relatively fast file access. DOS peripherals are installed and DOS commands are available. It includes a utility program that transfers programs and data files from a CP/M-86 disk to a standard DOS disk. *(List Price: $75)*
Requires: 48K, two disk drives.

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
(212) 860-0300
TWX: 710-581-2524
Telex: 640-693

COBOL Animator

376 A program animator that displays source code listings on the screen and moves tha cursor from statemant to statement during execution. It provides an alternativa to the COBOL program development facilities found on a mainframe. Users can create a programmer work station for devaloping and maintaining COBOL programs on their PC. It can be used with the manufacturer's Level II COBOL. *(List Price: Animotor for Level II $800, onimator for CIS COBOL $425)*
Requires: 64K, two disk drives, CP/M-86.

Micro Focus, Inc.
1601 Civic Center Dr.
Sonto Cloro, CA 95050
(408) 496-0176
Telex: 278-704

PCScreen

377 A set of programs designed to simplify and improve the user's programming by converting a format the user types onto the screen into a ready-to-run BASIC program segment. The segment may be linked to another program and to a screen control subroutine. The segment sets up scraens and handles input formatting. Fields may be "colored" with reverse video and variations in intensity. Nine field format types may be specified, such as phone number, numeric, and yes/no. An accompanying Help module further simplifies programming. *(List Price: $39.95)*
Requires: Not available.

Single SOURCE Solution
P.O. Box 578
Concord, CA 94522
(415) 680-0202

GSS-Plot

378 An applications development tool that enables programmers to add graphics into their programs. It prepares high-quality line graphs, bar charts, scatter charts, pie charts, and othar graph-type displays. *(List Price: $500)*
Requires: 64K, one disk drive, color/graphics adapter, CP/M-86.

Digital Research
P.O. Box 579
Pocific Grove, CA 93950

PCM/1

379 A general-purpose macro generator with uses ranging from program development to the automatic compilation of certain kinds of documents. *(List Price: $200; monuol only, $20)*
Requires: 64K, one disk driva.

Automoted Office Systems
602 Lookout Dr. #213
Richardson, TX 75080
(214) 669-9966

PC-UTIL

380 A software device that enhances directory and copy utilities. The directory is enhanced by user-selectable sorter sequances and formats, and the copy utility can append files during the copy procedure. *(List Price: $95)*
Requires: 64K, one disk driva.

Tecmor Inc.
23600 Mercontile Rd.
Clevelond, OH 44122
(216) 464-7410
Telex: 241735

PC BASIC (Microsoft) Programmer Utilities

381 A utilities packaga that includes capability for password protection, packing data, program formatting and listing, variable dump, reference list, defined matrices and user functions, and error handling. *(List Price: $200)*
Requires: 64K, two disk drives.

Enhanced Technology Associates
3929 Lynn Ave. South
Minneopolis, MN 55416
(612) 929-7889

Speedup-Plus

382 A program that provides a disk image in memory and eliminates forced reading and rereading of often-used portions of the disk. Users can specify how much available mamory is to be used for imaging the disk. The program is compatible with DOS, BASICA, BASIC, FORTRAN, both Pascal systems, and FORTH. It is also compatible with *VisiCalc*, *WordStor*, and Peachtree software. Hard disk drive support is also available. *(List Price: $199.95)*
Requires: 64K, one disk drive, (printer recommended).

Internationol Computers
13048 Olive Blvd.
Creve Coeur, MO 63441
(314) 878-8838

Diskette Catalog

383 A disk management program that keeps track of an unlimited number of disks, whether for IBM or another microcomputar. It enables the user to locate a file or to print a directory of diskettes. *(List Price: $29.95)*
Requires: 64K, one disk drive, (printer optional).

N.F. Systems, Ltd.
P.O. Box 76363
Atlonto, GA 30358
(404) 252-3302
Source: *TCK071*

TeleSoft PSE

384 A programming support environment that features the *TeleSoft-Ada* compiler, development tools, and utilities. Ada is a programming language for large-scale, real-time, and process control systems. The Department of Defense developed Ada as a standardized language interchangeable between processors and systems, thereby encouraging component-oriented software design and maintenance. A p-code interpreter allows implementation of the TeleSoft PSE on the IBM PC. Fully self-contained, the PSE requires no other software or operating system for execution. Many utilities are currently available. Prices include one software update; additional updates may be purchased. *(List Price: $2,975)*

Requires: 256K (320K recommended), one floppy disk drive, one TG-1000 or TG-1200 5¼-inch hard disk drive.

TeleSoft
10639 Roselle St.
San Diego, CA 92121
(714) 457-2700

Memory Diagnostics

385 A program that tests the entire 1MB of memory space. Full diagnostics are included to determine exactly which memory devices are not performing properly. All test data may be printed or logged on the disk. *(List Price: $25 including documentation)*

Requires: 48K, one disk drive.

Micro Match
10343 Commerce Ave.
Tujunga, CA 91042
(213) 353-5929

Stop-List

386 A system enhancement utility program that provides single-key operation of the Pause/Resume function, a slow-motion display option, and automatic operation upon system startup. It is compatible with DOS software. *(List Price: $24.95 including manual)*

Requires: 32K, one disk drive.

Wilcro Systems
P.O. Box 11208
Dallas, TX 75223
(214) 321-7049

Forms-2

387 A visual programming tool designed to speed the creation of programs involving interactive screen handling. The programmer can "paint" a form on the screen, as it is to appear to the user at run-time, and Forms-2 generates COBOL source code to handle the screen. It can also generate COBOL programs for data entry/inquiry and for application prototyping. *(List Price: $200)*

Requires: 64K, one disk drive, Level II COBOL or CIS COBOL, CP/M-86.

Micro Focus Inc.
1601 Civic Center Dr.
Santa Clara, CA 95050
(408) 496-0176

P-FIX

388 Allows all printer functions to be redirected to the serial port and circumvents the time out of the RAM software when printing on a slower printer. PRN, Ctrl-PrtSc, and PrtSc keys behave as if the regular printer were connected to the system. It is designed for users with a color/graphics adapter and a communications board. *(List Price: $29.50)*

Requires: One disk drive, asynchronous communications adapter, color/graphics adapter.

RGB Designs
175 S. San Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

Key-Note

389 A string processor that becomes part of DOS. Users can specify strings of up to 256 characters or control functions with a single keystroke. Strings may be saved in MACRO disk files. *(List Price: $49)*

Requires: 16K, one disk drive.

RGB Designs
175 S. San Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

UNBASIC

390 A BASIC preprocessor to allow the user to program in a more powerful extended BASIC. Included are new features such as CASE...CEND, LIB, and WHILE...WEND. UNBASIC translates the program into standard BASIC. *(List Price: $75)*

Requires: 64K, one disk drive, (printer optional).

MicroCorp.
913 Walnut St., P.O. Box Q
Philadelphia, PA 19107
(215) 627-7997
Source: TCMO33
CompuServe: 70335,1027

File Compare

391 A file comparison utility that displays the differences between two files. The program can be used for any type of file and supports various comparison parameters including display format such as character, character and hex, and start and end records. The output can either be viewed on the monitor or printed. *(List Price: $34.95)*

Requires: Not available.

N.F. Systems
P.O. Box 76363
Atlanta, GA 30358
(404) 252-3300

OMS Utilities Package

392 A package of control utilities including switching system operations from monochrome to color monitor and vice versa, opening communication channels, speeding up floppy disk access time, and setting tabs on Epson and NEC printers. It is compatible with *VisiCalc*. Source and executable codes are provided. *(List Price: $25)*

Requires: Not available.

Organizational Management Systems, Inc.
7304 Kathydale Rd.
Baltimore, MD 21207
(301) 668-9011

SerPrinSoft

393 Utility software that allows the user to utilize the full potential of a printer. It integrates serial printer support into DOS and allows the user to specify serial port number, handshaking protocol, baud rate, parity, stop bits, or word length. *(List Price: $79.95)*

Requires: 64K, one disk drive, communications adapter, serial printer.

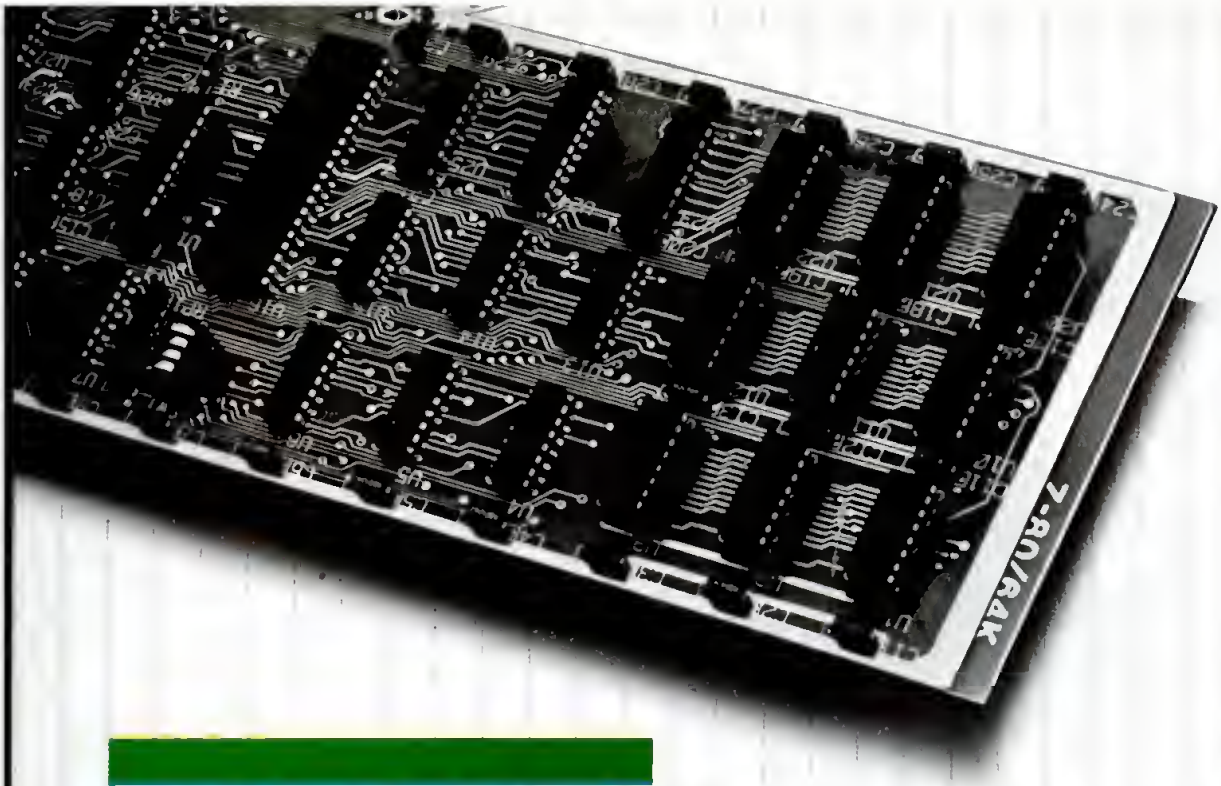
International Computers
13048 Olive Blvd.
St. Louis, MO 63141
(314) 878-8838

Standard Input Subroutine

394 A programmer's tool that may be used in any program to control the screen positioning and operator input. The parameters pass to the routine and check for valid length and type of data. *(List Price: $85)*

Requires: Not available.

Solution Software Systems
3930 Whispering Trails
Hoffman Estates, IL 60195
(312) 893-5111



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More programs and faster access available now!
Today with the BYAD DS1 plug-in expansion circuit board, you can increase the speed and productivity of your IBM-PC.

More programs
The BYAD DS1 allows you to transform your system into a CP/M computer giving access to the largest existing software library (CP/M version 2.2). Data base Management, word processing, business programs, and literally thousands of CP/M programs can be used.

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The DS1 board contains 64K bytes of parity RAM and a Z80B microprocessor. The Dual Systems, Z8D and IBM 8088, achieve improved performance CP/M with up to 3D times faster access through interrupt driven full I/D buffering. DS1 uses the 8088 as an intelligent concurrent I/D processor which performs keyboard type-ahead buffering, printer buffering, disk track and directory buffering.

Easy Operation
No learning curve or new commands when using DS1. Utility programs are provided for reading various 5¼" diskettes directly, moving files, and to link your IBM with a serial port to any existing CP/M system. An expanded version, BYAD DS2, contains a built-in serial port and includes all features of DS1.

Cost Competitive
Both BYAD DS1 and DS2 operate with a minimum 48K single drive system. The DS1 costs only $66D and the DS2 with serial port, $760. A comprehensive operating manual is available at $4D and the cost will be applied to the purchase of either a DS1 or DS2.

Send check, money order or call 312 539-4922 and give your VISA or Master Card number for quick delivery

BYAD Inc.
5345 North Kedzie Avenue
Chicago, Illinois 60625
312 539-4922

BYAD

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UTILITIES

Keynote Keyboard Enhancer

395 A keyboard enhancer that allows the user to specify repetitively typed phrases or control functions with a single keystroke. The strings mey contain any legel ASCII characters, making it possible to redefine many of the PC's keys. It includes a querterly softwere newsletter with program enhancements and updates. *(List Price: $49.95)*
Requires: 48K, one disk drive.

Gerord Cerchio System Consultonts
1110 Whirlow Pl.
Son Jose, CA 95131
(408) 923-0911

DISKFIX/PC

396 A utility thet helps recover accidentelly erased files, reorganizes the disk by putting eech file in contiguous sectors, displays free space remaining, end ellows the display and patching of any disk sector or copy sector within a disk or to enother disk. The system is menu-driven and comes with documentation. Disk sectors may be referenced by absolute sector numbers or by fila neme end sector number within a file. Sector displays are in both hex and ASCII, and patches may be entered in both. It is capable of handling both double- and single-sided disk drives. *(List Price: $49)*
Requires: 48K, one disk drive.

Unicorn Systems Company
3807 Wilshire Blvd.
Los Angeles, CA 90010

Easyscreen/PC

397 A full-page video display handler and program generator that allows multiple screens in each program end provides instent response. Screens are designed on line using cursor control keys. A full lina drawing set is evaileble for edvenced screen design. Compiled screens can be integrated into programs.

A program generator cen be used even by novice programmers to creete BASIC programs with a deta base keyed access method and add, delete, update, end inquiry capabilities. Screen images ere disk-based files with each screen requiring about 2K of memory. *(List Price: Screen and program generator $169.95, screen generator only, $99.95)*
Requires: 32K, one disk drive.

PRODATA, Inc.
663 S. Copitol Blvd.
Boise, ID 83702
(208) 342-6878

Access-Master

398 A disk accessor that may be used within any BASIC program to sequentially process random eccess files in any key-specified order. Using SKRAM techniques, access files with keys up to 30 bytes long may be eccessed in five different weys. Records mey be randomly retrieved by number. The program interfeces with *ScreenMaster*, a format generator by the same manufecturer. *(List Price: $100)*
Requires: 48K, one disk drive.

Softwore Masters
6704 Hoover Rd.
Indianopolis, IN 46260
(317) 259-7892

V-Utility

399 A softwere package consisting of four *VisiCalc* utility programs on one disk. *V-Print* is a flexible printing utility that allows the user to select which columns to print end whether to print sheet equations. *V-Stot* collects data end calculetes numericel distribution, correlation coefficient, regression enelysis, Chi-squered test, end T test. *V-Plot* inputs data from a *VisiCalc* column and plots either one or two columns on a regular line printer (graphics are not required). *V-Overlay* provides overlays to load onto the *VisiCalc* sheet including moving averages, exponential smoothing equetions, time-series trend enelyses, end dete columns. *(List Price: $99.95)*
Requires: 48K, one disk drive, *VisiCalc*.

Yucaipa Softwore
12343 12th St.
Yucaipa, CA 92399
(714) 797-6331

Comorg

400 A program that quickly end efficiently organizes end presents menus with no need to modify the source code of menu program when adding or deleting programs. It offers one mein menu end up to 14 sub-menus, with 15 options per menu. *(List Price: $90)*
Requires: 64K, one disk drive.

Comsen Inc.
20-A Erford Rd.
Lemoyne, PA 17043
(717) 737-2049

Master Sort

401 A machine language sort/merge utility that has up to 12 sort/merge keys, dynamic memory ellocation, and e key index technique. *(List Price: $100 Conodian)*
Requires: 64K, one disk drive.

Micro Masters Softwore Ltd.
P.O. Box 513
Edmonton, Alberto
Conodo T5J 2K1
(403) 922-3088

Tools 1

402 A utility package thet includes an expanded directory with system informetion. Other features include displeying and editing disks by tracks and sectors, retrieving and displeying differences between files, and retrieving key words (or strings) in selected files. *(List Price: $49.95)*
Requires: Not eveilable.

Sysco Softwore
4739 Mt. Longs
Son Diego, CA 92117
(714) 287-1405

Comsort

403 A program thet will sort any data files used on the PC and has unlimited key size. It can save or sort specifications for future use and cen be used as a subroutine in existing programs. An entire record or respective record numbers can be sorted. *(List Price: $80)*
Requires: 64K, ona disk drive.

Comsen Inc.
20-A Erford Rd.
Lemoyne, PA 17043
(717) 737-2049

BASIC Enhancements

404 A BASIC languege enhencer thet ellows (GOTO X), (GOSUB X), (RESTORE X) in normel BASIC end more handy utilities. *(List Price: $35)*
Requires: 48K, one disk drive.

Softwore Masters
6704 Hoover Rd.
Indionapalis, IN 46260
(317) 253-8088

Computer Advantages for Your IBM PC

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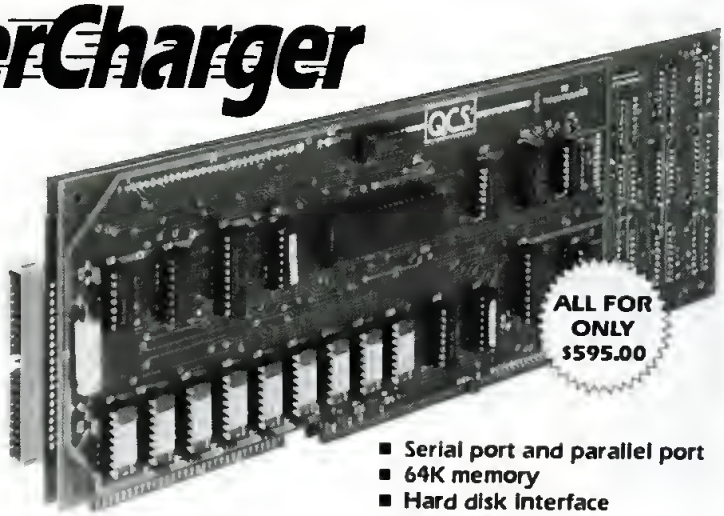

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- Single Side/Double Side

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* We are not responsible for software problems.

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UTILITIES

Pascal Tools

405 A package of utility programs to help the Pascal programmar with principles and applications of structured programming and top-down design. It includes tested real-life programs to aid in the production of othar programs. A 366-page book, *Software Tools in Pascal*, is included. *(List Price: $75)*

Requires: 64K, two disk drives, printer.

MicroCorp.
913 Walnut St., P.O. Box Q
Philadelphia, PA 19107
(215) 827-7997
Source: TCMO33
CompuServe: *70335,1027*

FrameUp

406 A utility that incorporates development mathods. Tha methods allow programmers to begin implementation without studying the datails of the operating system, file management, screen formatting, and error recovery. Features include a standardized I/O area to which tha programmer can deliver or gather input data. Preprogrammad routines supplied with the program can be merged into any program. The routines reduce testing and repetitive design/implementation of standard functions that appear in more than one program module. Standardized printer output to one format or a selected group of preestablished formats is also included. Operation of the application is standardized due to limited use of function keys. Each application and subsection has the same user instructions regardless of application. *(List Price: From $175)*

Requires: 64K, one disk driva.

CTAC, Ltd.
38 Carden Road
Wellesley Hills, MA 02181
(617) 235-8830

Utility Package

407 A disk-besed packaga containing programs to control the hardware in the IBM PC. Included in this package are three keyboard handlers, two monochrome display handlers, two printer handlers (one with spooling), a tone generator for the speaker, a DMA controller, a timer controller, and an intarrupt controller. All programs are written in assembly languaga. Source code is provided. *(List Price: $95)*

Requires: 64K, one disk drive.

Micro Match
10343 Commerce Ave.
Tujungo, CA 91042
(213) 353-5929

XREF

408 A program that creates a cross-reference to other BASIC programs. It genarates a legibly formatted listing of the program, with indentation used to show the program's structure clearly. It paginates the listing and can print the program name and date/tima on each paga for leter reference. Then it prints a list of every variable in the program and the line numbers in which each variable occurred. Finally, it prints a tabla of all line numbers, showing each line in which line numbers ware used in a direct transfer, and each lina in which line numbers were used in a subroutine call. *(List Price: $39.95)*

Requires: Not available.

Single SOURCE Solution
P.O. Box 578
Concord, CA 94522
(415) 680-0202

Jools/86

409 A packaga of softwara tools that is specially adapted for CP/M-86. Included in the package of 16 modules is *VSort* for high-speed internel/external sorting on fixed or variabla-langth fialds, *Select* for lina extraction from a file based on field values, *Find* and *Reploce* for searching for and replacing text within files, and *Rearrong* for reordaring fields to user-specified formats. The package maintains mailing lists and bibliographic data bases, generates permuted texts, and monitors file changes. *(List Price: $95 including manual)*

Requires: 128K, CP/M-86, one disk drive.

Pluto Reseorch
P.O. Box 50444
Palo Alto, CA 94303
(415) 323-5654

Cross-Reference (Microsystems)

410 A cross-reference listing of all variables and COTO and GOSUB elements in a BASIC program, sorted in alphabetical and line-number refarence ordar. *(List Price: $34)*

Requires: 64K, two disk drives, DOS or CP/M-86.

Microsystems
7201 87th Ave. SE
Mercer Island, WA 98040
(206) 232-1513

String Sort

411 A machine language sort routine to use with BASIC programs. It sorts any string array into ascending alphabetical order. *(List Price: $24.95)*

Requires: 48K, one disk drive.

Ensign Software
2312 N. Cole Rd., Ste. E
Boise, ID 83704
(208) 378-8086

BASIC Utilities

412 A set of utility programs for BASIC programmars, including subroutines for formatted input, matrix input and arithmetic, line drawing, and fila searching. The package also contains a program for cross-referencing and similar aids. *(List Price: $75)*

Requires: Not available.

Basic Business Software, fnc.
P.O. Box 26311
Las Vegas, NV 89126
(702) 876-9493

LANGUAGES

PC/FORTH

413 An intaractiva, extensive lenguage for graphics, data acquisition, and procass control applications. Portabla FORTH code provides e programming anvironmant with interpreter, compiler, editor, assemblar, and utilitias all co-resident. Tha complete packaga includes an interpretar/compiler with virtual mamory managemant, e custom full-screen editor, an 8088 assemblar, utilities, demonstration programs, and a 150-page user manual. Optional extension packages for floating point math, advanced color graphics, data base management, and targat compilation ara also availabla. *(List Price: $100, extension packages $100 each, data base management $200, target compiler $300)*

Requires: 64K, one disk drive.

Laborotory Microsystems
4147 Beethoven St.
Los Angeles, CA 90066
(213) 306-7412

BASIC Compiler

414 A superset of standard BASIC that accepts the most popular syntax and many extensions to the languaga. Such extensions are Chain, Line Input, Peek, Call, On Error, and Poke.

Long variabla names are allowed and lina numbers are not required. The progrem also supports the complete ranga of built-in string and numeric functions including CHR$, STR$, EXP, LOG, TAB, LEFT$, and ATN. It supports 13-digit precision BCD. *(List Price: $300; monual only, $25)*

Requires. 48K, ona disk driva, CP/M-86 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Chompaign, fL 61820
(217) 359-2112, 359-2691
Telex: 270-365

LANGUAGES

PCFORTH

415 A fig-FORTH version of FORTH that is availabla with printer functions and additional words such as Dump. PCFORTH applications are transportable, and FORTH modules can be accessed from the keyboard or tested without writing drivars and tracers. FORTH interfaces with machine language. Words can be dafined in aithar high-level FORTH or machine languaga. *(List Price: $89.95)*

Requires: 18K, one disk drive.

Armodillo Int'l Softwore
P.O. Box 7661
Austin, TX 78712
(512) 459-7325

C86 C Compiler

416 A program that provides for full implementation of the C programming language, availlable for CP/M-86 or DOS. The distribution disk contains the compiler, an extansive library in source and object formats, and a linking loader. *(List Price: CP/M-86 ond DOS versions $400; disk ond documentotion $250; documentotion only, $25)*

Requires: 96K, two disk drives.

Computer Innovotions, Inc.
75 Pine St.
Lincroft, NJ 07738
(201) 530-0995

MMSFORTH V2.1

417 A structured, modular language and operating system including an interpretar and compiler, an 8088 Assambler, 79-Standard FORTH, and an extensible instruction set. Applications are available, as well as support from a newsletter and user groups. *(List Price: $249.95)*

Requires: 32K, one disk drive, 80-column monitor.

Miller Microcomputer Services
61 Loke Shore Rd.
Notick, MA 01760
(617) 653-6136

Thread

418 A highly structured intarpretive language that uses syntax based on C language and a "stacking" araa for stored values. It performs intarpreting, compiling, and editing functions by executing coded words, defining naw words, entering them into an expandable dictionary, and modifying words being defined. *(List Price: $249; manuol only, $75)*

Requires: 128K, one disk driva, 80-column monitor.

DWB ond Associotes
P.O. Box 4609
Portlond, OR 97208
(503) 249-0412

LISP/86 Language Processor

419 An artificial intelligence languaga based on the Interlisp dialect, which offers over 75 built-in functions including traca, file I/O, and string operations. Written in C language, tha program comes with a simple editor, file librarian, and formatted expression print routine. Also included ara two artificial intelligence demonstration programs: a guessing game that learns as it plays and a varsion of the *Eliza* psychiatrist program. *(List Price: $49.95)*

Requires: 64K, one disk drive, printer.

Norell Dato Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

Lattice C Compiler

420 Full implementation of C language with library and I/O subroutines that implement most standard I/O functions as specified by Kernighan and Ritchie under DOS. It is compatible with the UNIX version 7 C compiler and produces ralocatable machina code in Intel's 8088 object module format for use with the linker supplied with DOS. *(List Price: $500)*

Requires: 48K, two disk drives.

Lifeboot Associotes
1651 Third Ave.
New York, NY 10028
(212) 860-0300
TWX: 710-581-2524
Telex: 640693

Level II COBOL

421 A mainframe-compatible COBOL compiler that allows ANSI '74 applications programs written for mainframes to run on tha PC with minimal conversion. It can be used with a PC instead of a mainframe to provide COBOL program development facilities. It can also be used with the manufacturar's COBOL Animator to create a programmar work station out of tha PC to devalop and maintain COBOL programs. *(List Price: Level II COBOL $1,600, Animotor $800, with CIS COBOL $425)*

Requires: 64K, two disk drives, CP/M-86.

Micro Focus, Inc.
1601 Civic Center Dr.
Sonto Claro, CA 95050
(408)496-0176
Telex: 278-704

C Compiler

422 A package that contains the UNIX version 7 compatibla C compiler in assembly source form or executable object; "clib--," the run-time support library in assembly sourca form; "stdio.h"; and the Standard I/O Library in C source form. An interfece for DOS is availabla. The compiler is also designed to operate as a native compiler or as a cross compiler. *(List Price: Without floating point $200, with floating point $350, source code $2,500)*

Requires: 64K, one disk driva.

Telecon Systems
90 E. Gish Rd. #25
Son Jose, CA 95112
(408)275-1659

TeleSoft-Ada

423 A structured, high-level language that supports many constructs of Pascal. This varsion is a partial implemantation of standard Ada with no extensions, but it can be used for affective systems programming. It features a syntax checker.

TeleSoft
10639 Roselle St.
Son Diego, CA 92121
(714)457-2700

BASIC Compiler

424 Microsoft's BASIC Compiler that enables users to write and test programs with the BASIC intarpratar and than compile them into machine-level code. This can significantly increase execution speed. Once distributed, compiled programs cannot be listed or modified, which helps safaguard their design. *(List Price: $300, IBM Product Center prices)*

Requires: 64K, ona disk driva.

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800)447-4700, 322-4400 Illinois, 447-0890 Alosko, Hawoii

FORTRAN/RATFOR

425 A complete FORTRAN compiler. RATFOR compiles into FORTRAN, allowing the user to write structured code while retaining the benefits of FORTRAN. SSS FORTRAN makes full FORTRAN IV available to microcomputers. *(List Price: FORTRAN $275; RATFOR $100; monuol only, $25)*

Requires: 32K, one disk drive, CP/M-86 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Chompoign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

MatchMaker 8600

426 An interpreter that allows databus programs to run in e single-user environment. It effectively opens up a catalog of field-tested datapoint applications progrems to the PC user. It ects es an interprater, translating databus instructions into pseudo-code, an intermediate conversion step that is then translated for each operation. MotchMoker comes with e 30-dey returnable guarantee. Restrictions of sale includa single-user purchase for internal use only. *(List Price: $6,000)*

Requires: 96K, one disk drive.

CARE Computer Systems
P.O. Box 1408
Bellevue, WA 98008
(206)451-8272

NCAPT Software System

427 A sophisticated language for numerical control programming previously linked to large-computer use. It includes point, line, circla, tabulated cylinder, vector end matrix definitions, conditional branching, end looping logic and cutter compensation. *(List Price: $5,500; manual only, $85)*

Requires: 64K, 1MB hard disk drive, Baby Blue, CPU board.

FTG Dato Systems
10801 Dale St., Ste. M-2
P.O. Box 615
Stonton, CA 90680
(714)995-3900

C Compiler

428 A compiler for C language systems and epplications programming. It features the PL/M compatibility moda, which allows the code generated by the C compiler to be used directly with PL/M and Pascal programs. *(List Price: $195)*

Requires: 96K, two disk drives.

c-systems
221 N. Berkeley Ave.
Fullerton, CA 92631
(714)879-1123

PC/FORTH

429 A program development system that includes an interprater/compiler with virtual memory menagement, a custom screen editor, a line editor, an assembler, e compiler, and many utilities. Floating point math extensions, cross compilers, end other options are also available. *(List Price: Not available)*

Requires: 48K, one disk drive.

Laborotory Microsystems
4147 Beethoven St.
Los Angeles, CA 90066
(213)306-7412

Pascal Compiler

430 A lenguage compiler by Microsoft that provides e system development environment for the creation end execution of Pascal programs. It allows separate compilation of program elements for maximum system performance and supports several features for advanced programming work. *(List Price: $300, IBM Product Center prices)*

Requires: 128K, two disk drives.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800)447-4700, 322-4400 Illinois,
447-0890 Alaska, Hawaii

UCSD FORTRAN-77 Compiler

431 A FORTRAN-77 Compiler for the UCSD p-System that develops programs in ANSI-77 FORTRAN. FORTRAN-77 is a popular language for sciantific and engineering epplications. Users can develop programs in both UCSD Pascal and UCSD Fortran. *(List Price: $175, IBM Product Center prices)*

Requires: 64K, two disk drives.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800)447-4700, 322-4400 Illinois
447-0890 Alasko, Hawoii

LANGUAGES

FORTH Computer Assisted Instruction Course

432 A FORTH lenguege end editor packege that includes en instruction course. FORTH is one of the more powerful languages, and it is memory efficient, machine transportable, and cuts down on program development time. *(List Price: $59.95)*

Requires: 64K, one disk drive.

Internotionol Computers
13048 Olive Blvd.
St. Louis, MO 63141
(314) 878-8838

UCSD Pascal

433 The UCSD p-System Pascal compllar by SofTech Microsystems allows users to develop Pescal or assembly language programs, as well as extensions for system development and commercial applications programming. Because the UCSD p-System is modular, users can edd the FORTRAN-77 or BASIC compiler, ellowing modules written in one language to ba used in programs written in enother. The moduler system also allows the use of separataly compiled Pascal modules that alreedy exist in program libraries. *(List Price: $175)*

Requires: 64K, two disk drives, UCSD p-System.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois,
447-0890 Alasko, Hawaii

COBOL Compiler

434 A compiler by Microsoft thet allows users to develop programs in COBOL, a language designed specificelly for business applications. IBM COBOL is e version of the ANSI x3.23 1974 level stendard, with extensions that support color end screen formatting. Other capabilities include Call end Chain to other programs, the ebility to combine object modules with those from the PC's Macro Assembler, and segmentation. *(List Price: $700, IBM Product Center prices)*

Requires: Two disk drives, 80-column monltor, 64K for compilling (COBOL programs mey be exacuted on e smeller system).

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800)447-4700, 322-4400 Illinois,
447-0890 Alasko, Hawaii

C/86 Compiler Version 2.0

435 A compiler that generates essembly languege code end supports most features found in C language. Written in C end assembly languege, the program includes full C structures, pointers and arrays, storage classes, and initialization. The product compiles ell C erithmetic end logical operators, and ell control statements. The source for sample utility programs and standard C library is included. C/86 compiles in one pass and generates 8086 assembly language code for the PC Macro Assembler. *(List Price: $79.95)*

Requires: 64K, two disk drives, printer.

Norell Doto Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

Ultra-BASIC Translator

436 A tranelator of high-lavel structured BASIC lenguega into IBM Disk BASIC. Feetures include the abillty to use any IBM-DOS commend or stetement, alphenumeric lebels up to 70 characters long, string handling, and random-file data structures. Users do not need FIELD, LSET, MKI, or CVI. A structured block code for program meintenenca and use is also included. *(List Price: $75 including manual and source code)*

Requires: 64K, one disk drive.

Basic Business Softwore, Inc.
P.O. Box 26311
Las Vegas, NV 89126
(702) 876-9493

APC BASIC

437 A BASIC lenguage for the IBM PC designed to improve execution speed, debugging facilities, memory utilization, end program development time. It includes expanded string functions to support business data processing, end accureta arithmetic to 8, 10, 12, or 14 digits. Feetures include trace/conditional trace, global edit, multiple buffar files, cross-reference progrem, dynemic code merging, bit functions, multiline user functions, dynemic erray dimensioning, and assembly language interface. *(List Price: $400 including manual)*

Requires: 32K, one disk drive, Z-80 card.

Americon Plonning Corporation
4600 Duke St., #423
Alexandrio, VA 22304
(703) 751-2574

87BASIC

438 A floating point library that allows programs compiled by the IBM PC BASIC compiler to drive the optional Intel 8087 numeric deta processor. It supports single- end double-precision numbers, and incorporates ell the floating point features of the 8087. *(List Price: $125)*

Requires: 128K, one disk drive, IBM PC BASIC compiler, 8087 coprocessor.

MicroWore
P.O. Box 79
Kingston, MA 02364
(617) 746-7341

Janus

439 A subset compiler that includes meny feetures of ADA edepted for the microcomputer. *Janus* produces mechine code for PC-DOS and includes feetures such as separate compilation, user-defined types, and erbitrary precision-fixed and floating-point numbers.

Jonus feetures modular programming (the computer rathar than the programmer remembers which modules are being used) and re-entrant initialized variables. The system can check ell references against externel definitions, minimizing human error. Tha packaga includes double-density 5¼-inch disks, compiler object code, assembler and disassembler, linker, screen editor, and several example programs. *(List Price: $400; manual only, $25)*

Requires: 96K, two disk drives.

R.R. Software
P.O. Box 1512
Modison, WI 53701
(608) 244-6436

IBM FORTRAN Compiler

440 A language compiler that enables users to write programs in FORTRAN-77, a scientific and engineering language. Object files can be linked with files from PC Mecro Assembler programs. The compiler permits eccessing of both formetted end unformatted sequential end direct files. It containe an augmanted OPEN statement that takes additionel paramatars not included in the subset. *(List Price: $350, IBM Product Center prices)*

Requires: 128K, two disk drives.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800)447-4700, 322-4400 Illinois,
447-0890 Alaska, Hawoii

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Waterloo Micro Language Interpreters

441 A software packaga including interactive interpreters for various languages, and an editor for preparation of program source and data files. Five programming language dielects known as Waterloo mlcroAPL, mlcroBASIC, microCOBOL, microFORTRAN, and microPascal have bean designed specifically for educational use in tha teaching of computer programming. The *Woterloo microEditor* is a lina-oriented text editor with searching and substitution commands including global change. It is necessary to have the Waterloo Sarial Adaptar Board to run the softwere. *(List Price: Seriol Adopter boord $225; five longuoge processors $795, APL $325, others $225 each)*
Requires: 192K, ona disk drive, Waterloo serial adapter.

Wotsoft Products Inc.
158 University Ave. W.
Woterloo, Ontorio
Conodo N2L 3E9
(519) 886-3700

87Pascal

442 A library of floating point routines that drive tha optlonal 8087 numeric data processor to speed up and increase the accuracy of all IBM Pascal programs. *(List Price: $125)*
Requires: 128K, one disk driva, IBM Pascal Compiler, 8087 coprocessor.

MicroWare
P.O. Box 79
Kingston, MA 02364
(617) 746-7341

87Macro

443 A library of assembly languaga macro programs that can be run with the IBM Macro Assembler. The library includes pseudocodemacros for assembling the complete 8087 instruction set that features waakly typed mnamonics. A group of utility macros is also included for carrying out common floating point tasks such as: converting betwean numeric formats end types, evaluating trigonometric functions from the TAN function, encoding end decoding real numbers, trapping errors and comparing 8087 operands. *(List Price: $150)*
Requires: 96K, one disk drive, 8087 coprocessor.

MicroWare
P.O. Box 79
Kingston, MA 02364
(617) 746-7341

Macro Assembler

444 An assembler by Microsoft that enables users to develop and produce programs that may run several times faster than equivalent high-level language routines. Assembler-produced programs can be called from othar BASIC programs, as well as other high-leval languages such as Pascal, COBOL, or FORTRAN. *(List Price: $100, IBM Product Center prices)*
Requires: 96K, one disk drive, (64K if subset assembler, whlch does not support macros, is used).

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alasko, Hawaii

C Compiler

445 A two-pass compiler. The first pass produces en intermediate code (U-code for unlversal code). Pass two contains both the translator and the optimizer. The optimizer typically results in 40 percent coda reduction. *(List Price: $250; manual only, $15)*
Requires: 48K, ona disk drive, CP/M-86 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Chompoign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

C88 system

446 A compiler for C language, a linkage editor, and an extensive library of functions. The compiler accapts a larga subset of the C programming languege. The compiler supports the following features: int, char, arrays, and pointers; all C statements including for, do, while, and switch; and all C operators (except assignment operators) such as ++, --, and ?:. External linkage of separately compiled functions, C preprocessor statements such as #define, #includa, and #if.

An L88 linkage editor allows modules and functions to be linked together either by direct conversational lnteraction with the user or via linking instructions contained in e command fila. Tha linkar produces a map of all symbols to aid ln debugging.

Library functions include shell sort; sequential disk I/O package, random disk I/O packaga, and screen and cursor I/O package; keyboard handling routines; string manipulation routines; memory and I/O device access routines; and operating system interface routines. *(List Price: $250 including documentotion)*
Requires: 64K, two disk drives.

Intellect Associotes Inc.
P.O. Box 365
Holbrook, NY 11741
(516) 472-4449

WS-Driver

447 Software containing set of "fixes" tailored to any printar, including subscripts, superscripts, and bold printing. *(List Price: $50)*
Requires: 64K, one disk drive, printar.

MicroCorp.
913 Walnut St., P.O. Box Q
Philodelphio, PA 19107
(215) 627-7997
Source: TCMO33
CompuServe: 70335,1027

Comm-Plus

448 An on-disk patch kit that modifies an IBM asynchronous program to support uploading and downloading, printars, auto-dial for Hayes Smartmodem, and more. It includes a 150-paga Intelliterm tutorial. *(List Price: $25)*
Requires: 64K, one disk drive, asynchronous communications adaptar, (printer optional).

MicroCorp.
913 Wolnut St., P.O. Box Q
Philodelphio, PA 19107
(215) 627-7997
Source: TCMO33
CompuServe: 70335,1027

R/BASIC

449 An expended version of BASIC that uses the 8087 numaric co-processor to manipulate data, extract portions of variables, and concatenate them with others. Additional statements allow users to manip-ulate data stored ln a relational data base.

Optional hardwara can be utllized: additional RAM to 256K, edditional floppy or hard disk storage, a monochroma or graphics monitor or adaptar, and an asynchronous communications adapter. *(List Price: $500 for o transferable license to use the program on o single mochine)*
Requires: 128K, one disk drive, 8087 numeric co-processor.

Cosmos, Inc.
10626 148th Ave. SE
Renton, WA 98056
(206) 226-9362

Patcher-Plus

450 A generalized patching program to allow correction of any PC-DOS disk fila in tha field. It is especially intended for programmers, EDP managers, and computer stores, and is useful for device-dependent fixes. *(List Price: $100)*
Requires: 64K, one disk drive, (printar optional).

MicroCorp.
913 Wolnut St., P.O. Box Q
Philodelphio, PA 19107
(215) 627-7997
Source: TCMO33
CompuServe: 70335,1027

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This program allows you to draw and display objects in 12 colors in 320 by 200 mode instead of the normal 4 colors. You can save images to disk and load into basic arrays. Requires DOS and color card. (Joy-stick optional).

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SAME AS I EXCEPT B&W IN 640 BY 200 MODE.

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C COMPILER

For the IBM Personal Computer. The package includes the compiler, with complete installation and operating instructions, and the C source for many standard library functions.

The C compiler is UNIX® ver. 7 compatible. Cross compilers are available for the PDP-11, 6809, and 8080. Full C or C without float is available to meet individual needs.
(UNIX) is a trade mark of Bell Labs.)

C	$200.00
C w/float	$350.00
Cross C	$500.00

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408-275-1659

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Applications Software

Applications software is software designed for business, scientific, and engineering uses of computers. This kind of softwere gives the computar instructions to carry out specific tesks such as writing payroll checks or plotting business graphs or charts.

Applications Software is the largest of the three software categories. The section has ten subcategories: General Business, Financial, Accounting and Inventory, Job and Industry Specific, Spreedsheets, Data Management, Word Processing and Text Editing, Mailing Lists, Communicetions and Graphics.

Most of the applications programs are designed for businesses; however, many of tha programs concerned with loans, check and credit card management, or stocks and investments are also suitable for personal use.

When you select applications software, make sure it operates correctly with your hardware. Before you choose a program, check the mamory, storage (such es the number of disk drives), monitor (color or monochrome), printer, and other requlraments to make sure they match your PC. Try to see a demonstration and read about the software to make sure it does the work you need to do at the moment and the work you expect to do later on. Make sure, for example, that an accounting package processes as many records and transactions as your business requires, and that a payroll program handles the number of employees you have now as well as the number you expect to have in a few years. Find out if the program keeps records for the time periods you need, such as monthly, quarterly, or yearly. Also check that the program prints out the information that you need to keep on paper (or hard copy), and see how much you can customize the report columns, headings, or subtotals.

Finally, you may want to find out if the applications programs you select are compatible with other programs. For example, you may want word processing softwara that works with a mailing list or data managemant program.

The first group in the Applications Software section is General Business. These software packages are designed for tasks such as business analysis, scientific research, record keeping, and scheduling.

Some of the specific applications of the general businass programs ere statistlcs and time and cost analysis. The programs also carry out project management by keeping track of project activity, raporting on personnel workloads, and monitoring deadlines. They keep records of appointments and meetings and monitor telephone use. They also keep records of business expenses and time spent with clients, and print out invoices.

The second applications softwara group is Financiel programs. These programs assist financial planning by anelyzing cash flow, budget alternatives, and incoma tax strategies. They enable you to study loans, compute interest and balances, and monitor loan and lease schedules. They also analyze and report on investmant portfolios, calculete investment values, and link the PC to electronic naws services for financial reports and quotations on bonds and stock options.

The next group under Applications Software is Accounting and Inventory Software. These programs cover general ledger, accounts payable and receivabla, payroll, and inventory. Some of the programs integrate all accounting functions, while others are stand-alone programs covering only one function, such as payroll or inventory.

The accounting programs ellow you to carry out tasks such as data entry, bookkeeping, posting to general ledger, and conducting audit trails. Many of the programs include report writing features for customer statements, aging reports, and reports on cash flow. The payroll systems enable you to enter lnformation about employaes, pay rates, deductions, taxes, and vacations and sick leave. The programs also enabla you to print out checks, W-2 forms, end summary reports. The inventory programs allow you to keep records of stock ordered, received, and sold, and to print out invoices.

Job and Industry Specific Software is the fourth group in Applications Software. These programs enable you to carry out many of the same functions as the general business, financial, and accounting software, except that they have been specially designed for people in particular occupations end industries. For example, billing, inventory, and accounting programs are listed, but they are customized for people in professions such as law or medicine, or in industries such as lumber or petroleum.

The software in this group covers applications such as computar-aided design for architects and civil engineers, freight billing for the trucking industry, and metar billing for oil and gas distributors. Also included are programs for medical and insurance records, and financial analysis and property evaluation for realtors, investors, and home buyers.

Spreadsheets, the next group under Applications Software, are programs that enable you to enter data into the columns and rows of a worksheet displayed on the PC screen. The programs calculate numerical data and then recalculate it when you need to make changes, such as increasing or decreasing budgets or sales projections.

You can use spreadsheets for applications such as calculating depreciation, analyzing loans and investments, computing taxes, and making business forecasts. Some of the programs also enable you to customize spreadsheets by adding screens and menus designed for real estate developers, brokers, accountants, and other professionals.

The sixth group in the Applications Software section is Data Management. Data management programs are used to enter, process, and report on data. You usually enter data through the PC keyboard, although you can do it with digitizers, light pens, or wands that read bar codes (see the Miscellaneous Hardware group of the Hardware section for descriptions of these devices). Once data is entered, you can carry out several different kinds of operations. You can sort the names of customers or names of cities or states into alphabetical order. You can also search the data to find particular records, update or delete the records, or add new ones. In addition, many data management programs enable you to do calculations of numerical data. Finally, depending on the program you choose, you can display a report of data on the screen or print out a report with a printer.

The next group, Word Processing and Text Editing Software, consists of programs designed to process text in the form of letters, reports, long documents, or computer programs. One of the major advantages of these programs is that they allow you to correct errors and make changes in your text before you print anything on paper.

The programs in this group enable you to carry out tasks such as inserting and deleting lines, and copying, moving, and delating blocks of text such as paragraphs or other sections of a document. Other features include paragraph indentation, automatic page numbering, page headers and footers, and search and replace functions. Some of the programs prepare tables of contents and indexes for documents, and allow you to edit one document on the screen while printing out another. Spelling checkers work with word processors to find misspelled words and then offer the chance to make corrections.

Programs in the mailing list group are useful for addressing large quantities of mail. These programs enable you to create and maintain mailing lists and print them on address labels or on letters and envelopes.

Many mailing list programs include a method of sorting lists numerically by zip code or alphabetically by name of person, city, or state. Some of the programs also enable you to create and print out telephone directories.

The next group of Applications Software is Communications Software, which enables two computers to be linked by cable or telephone lines. (When you connect your computer to another by telephone, you have to use a piece of hardware called a modem. Modems are discussed in the Hardware section.)

The communications programs enable the PC to function as a terminal connected to a large computer so you can have access to large data bases. You can also send and receive text, programs, and data files. Some of the programs even automatically dial the telephone connection number and then answer when someone else calls to link up with the computer.

The last group in the Applications Software section is Graphics Software. "Graphics" refers to pictures or drawings that are created on your PC. Some graphics can be printed out on dot matrix printers, but others require special output hardware called plotters, which use pens, some of which may be colored, to draw the graphics on paper.

Every IBM PC has some graphics capabilities. The monochrome monitor is useful for bar and line graphs. The color monitor, however, has more flexible graphics capability. It has high-resolution graphics that allow you to create circles and pie graphs and to simulate two- or three-dimensional graphics. Many graphics can show motion, and some business programs allow you to create charts and graphs that change automatically to reflect changes in data.

Software Requirements

FOR ALL SOFTWARE PRODUCTS we have listed memory, operating system, language, disk drive, interface, monitor, and printer requirements where available from manufacturers. Software requires DOS and BASIC except where other operating systems or languages are listed. Check with manufacturers and dealers before making a purchase to assure that software is compatible with your IBM PC.

GENERAL BUSINESS

The 25th Hour, 25:01 – Time Scheduler/Organizer

451 A program that automatically tracks recurring evants such as staff meetings, daily activities, and birthdays. Tha program allows users to schedule business and personal appointments and monitor deadlines. Features include optional activity reminders, verification of possible time conflicts, and warning flags for weekend dates. It will scan future dates for free time blocks. Recurring events may be initialized for specific years. Tha program accommodates individual schedules and can handle up to 600 entries per disk drive. It is menu-driven and uses single function keys. *(List Price: $99)*

Requires: 64K, ona disk drive, 80-column monitor, printer.

Softrend Inc.
P.O. Box 1462
Charlottesville, VA 22902
(804) 293-5344

Phone Chronicle

452 A program that logs outgoing calls and is intended for small-business users who need to monitor internal talaphone use for billing or cost-control. Tha program sorts, organizes, and presents calls in a report format including telephone number, date, time and length of call, and 3-digit individual employee/account code. *Phone Chronicle* consists of a single board, telaphone plug, cable, disk, and manual. The unit has a 100-call on-board memory and uses an external AC adapter to supply power when the computer is not in use. *(List Price: $395)*

Requires: 48K, one disk drive, (printer recommended).

Sycon
2918 Scott Blvd.
Sonto Clora, CA 95050
(408) 727-2751

MicroGANTT

453 A project-planning system designed for users who perform time-and-cost analyses. The programs use the Critical Path Method technique to determine task dependencies and project completion dates. When an aspect of a project is modified, the plan is immediately redisplayed to reflect the new schedule. *(List Price: $395 with documentation; manual only, $25)*

Requires: 64K, two disk drives.

Westico
25 Von Zant St.
Norwolk, CT 06855
(203) 853-6880

Time and Expenses Billing System (TEBS)

454 A system designed for individual consultants or business people who charge for services on an hourly basis. *TEBS* keeps records of time billing and expenses by a client, allows additions to billing records at any time, and calculates daily billable time.

The package also allows premium or minimum time changes for individual clients, produces a time and activity sheet to back up all billings, produces billing and expense invoices, and allows editing to any time or expense. With an external printer *TEBS* can produce billing invoices ready to be presented to a client. The program comes on a single-sided (160K) disk. *(List Price: $49.95)*

Requires: 64K, one disk drive.

Joseki Computer Corporation
2604 Artesio Blvd. #5
Redondo Beach, CA 90278
(213) 374-3251

Metamarket Systems

455 A complete marketing package for business users who need to seek new business prospects or track inventory versus demand. A variety of built-in functions manipulate the data base to provide different printout potentials. Tha data base can be composed of up to five family members or employees and up to 99 status or prospect codes per client. *Metomorket* includes an Emergency Exit function, allowing users to stop tha program from being processed and return to the main menu. It comes with a user guide and a subscription to the *Meto-Morket* newsletter. *(List Price: $545; manual only, $25)*

Requires: 64K, two disk drives, 80-column monitor, printer.

Metomorphics, Inc.
154 Montgomery Ave.
Bolo Cynwyd, PA 19004
(215) 668-9000

Time Accountant

456 A menu-driven program that maintains lists of activity codes and descriptions grouped by client or project. It aids in preparing summary reports of tima distribution from edited input. Tha program is modular and is written in BASIC. It is suitable for consulting firms, architects, CPAs, engineers, and service businesses. *(List Price: $195 including 1 year's upgrades and telephone support; user guide only, $25)*

Requires: 64K, two disk drives, printer.

Software Quality Associates
P.O. Box 50083
Palo Alto, CA 94303
(415) 324-8088, 321-4208

Project Management Tool

457 Business software designed for nontechnical managers, program leaders, and other individuals who need planning and project tracking support. Users enter projects as a series of things to do, give an estimated time for each step to be completed, and the name of the responsible person.

Once the entire project is described, the system uses its Critical Path Method (CPM) to calculate the total time the project should take and which tasks are most critical. The package will also report on individual workloads for those involved in the project. Networking or node numbering is unnecessary. Project items can be edited or deleted, or new tasks added to the project. The program is supplied on a single-sided (160K) disk. *(List Price: $99.95)*

Requires: 64K, 80-column monitor, one disk drive.

Joseki Computer Corporation
2604 Artesio Blvd. #5
Redondo Beach, CA 90278
(213) 374-3251

Personal Secretary

458 A system that keeps track of appointments, billings, and other information using a word-processor-like format. It allows flexibility in the entry of tima information, either numerically or by selection from a calendar. The system permits key-word searching for information between dates, and automatic accumulation of job-related invoice data. *(List Price: $55)*

Requires: 64K, one disk drive.

Computer Aided Design
764 24th Ave.
San Francisco, CA 94121
(415) 387-0263

Analysis

459 A decision support tool that handles information for planning, evaluation, and reporting. It performs time series analysis and statistical questionnaire analysis. Possible applications include marketing analysis, sales analysis, and cross-tabulation. Sales managers can compare sales teams and measure the impact of changing a commission plan.

Law firms, negotiators, consultants, and lobbyists can measure the impact of budget cutbacks, policy changes, or union demands on an entire group or segments.

The program talks to *Micro-DSS/Finance*, a financial modeling package from the manufacturer. *(List Price: $495)*

Requires: 128K, two disk drives.

Addison-Wesley Publishing Company
Reading, MA 01867
(617) 944-3700

Pairstat

460 A statistics program for paired data statistics and multiple data-set plotting. Included is a data editor that uses screen editor functions, a plotting routine, end a polynomlal regression routine up to the 20th order. *(List Price: $150)*
Requires: 48K, one disk driva, printer.

Davell Custom Software
P.O. Box 4162
Cleveland, TN 37311
(615) 336-3055

HSD Stats

461 A menu-drivan statistics package that accepts eight samples of 250 points each. The package offers descriptive statistics, ten data transformations, a frequency distribution and bar graph, percentila ranks and points, one or two variable chi-square, a correlation matrix for up to seven variables, and three t-tests. *(List Price: $99.95)*
Requires: 48K, ona disk drive, printer.

Humon Systems Dynomics
9249 Resedo Blvd. #107
Northridge, CA 91324
(213) 993-8536

Context MBA

462 A business systam that provides alectronic spreadsheet, graphics, data base, word processing, and telecommunications functions in one integrated program. *(List Price: $695)*
Requires: 256K, two disk drives, color/graphics adapter.

Context Monogement Systems
23864 Howthorne Blvd. #101
Torronce, CA 90505
(213) 378-8277

Agenda

463 A calendar system that keaps track of appointments, planned time, and "reminder" memos. An alarm sounds when a scheduled event time arrives. Any activity can be entered as a monthly or annual occurrence. Items can be posted with two expense codes (which can be expanded or redefined) and amounts. It is written in BASIC, uses random access files, and can handle up to 3,000 records. *(List Price: $65; manual only, $15)*
Requires: 64K, one disk drive, (printer recommended).

TCI Softwore
6107 W. Mill Rd.
Flourtown, PA 19031
(215) 836-1406

HSD Regress

464 A menu-driven multiple-regression package that accepts up to 25 variables of 300 data points aach. Output includes correlation matrix, predicted and residual scores, matrix inverse, semipartial correlations, coefficient waights, and p-values. *(List Price: $99.95)*
Requires: 48K, one disk drive, printar.

Human Systems Dynomics
9249 Resedo Blvd. #107
Northridge, CA 91324
(213) 993-8538

HSD Anova

465 An anelysis of varience program suitable for scientlfic research and business enelysis. It analyzes balancad designs from one to eight independent variables and handles designs composed of between-subjects and/or within-subjects factors. *(List Price: $74.95)*
Requires: 48K, one disk drive, (printer optional).

Humon Systems Dynomics
9249 Resedo Blvd. #107
Northridge, CA 91324
(213) 993-8536

Metafile

466 A program that uses an English-like command language and contains integration of functions and applications. Fecilities include text editing, data base management, electronic mail, forms entry, report writing, menu handling, spreadsheets, and interactive program testing.

Virtual memory, B-tree indexing, data arithmetic, variable length fields, and auto data type conversion are also used. Over 40 applications are available with sourca code. A damonstration version is available. *(List Price: $1,995 including Baby Blue cord)*
Requires: 64K, ona disk drive (hard disk also supported).

SENSOR-based Systems
Olmsted Federal Building
Chotfield, MN 55923
(507) 867-4440

Decision Making Matrix

467 A matrix that allows users to input all options involved in making decisions and to rate the characteristics of each option before making a final choice. The program allows "what-if" types of situations so the user can see the effect of meking a change in the rating factor of one of the variables. *(List Price: $45; manual only, $10)*
Requires: 48K, one disk drive, (printer optional).

Metomorphics, Inc.
154 Montgomery Ave.
Balo Cynwyd, PA 19004
(215) 668-9000

MicroGANTT™
You control your project.

MicroGANTT is a sophisticated project planning system which uses Critical Path Method (CPM) techniques and PERT to determine task dependencies and project completion dates. The user creates tasks, assigns costs and defines task dependencies. The interactive system immediately redisplays the project plan as data is entered. Projects are displayed as Gantt charts, labor time summaries and financial summaries.

MicroGANTT features: ■ Time scale of days, weeks, months, quarters or years can be varied at any time to present more or less detail. ■ Accommodates unlimited number of tasks in a project plan. ■ Detailed sub-projects can be included as tasks in a project model. ■ Assumptions are easily modified to make "What if?" analyses. ■ Single key-stroke commands page through tasks and calendar of events on display screen. ■ Single key-strokes switch the display from Gantt chart to labor time summary to financial summary. ■ Partial allocation of manpower to tasks. ■ Partial completion of prerequisite tasks. ■ All charts, reports and plans can be printed.

Available for **IBM Personal Computer** and CP/M compatible computers. Software and manual $395. Manual alone $25.

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GENERAL BUSINESS

Business Planner

468 A structured planning system that focuses on problems unique to new or expanding businesses. Designed to develop viable business plans, the program groups labor, equipment, and other costs into income-related projects. Projects are combined into models that generate graphics projections and estimated financial statements. By exploring alternate models, critical timing and resource allocation decisions can be evaluated. *(List Price: $295)*

Requires: 128K, two disk drives, printer.

Duosoft Corporation
P.O. Box 1827
Champaign, IL 61820
(217) 356-3111, 356-7542

Professional Time and Billing, Executive Package

469 Two business software packages. *Professional Time and Billing* is a time-allocating program designed for offices that bill clients at an hourly rate. *Executive Package* consists of over 40 forecasting and planning programs for office use. *(List Price: Not available)*

Requires: *Executive Package* 64K, one disk drive; *Professional Time and Billing* not available.

Alpha Software Corp.
6 New England Executive Park #400
Burlington, MA 01803
(617) 229-2924

Survtab Survey Analysis Software

470 A program for entering, editing, and analyzing data from survey questionnaires. It provides capability for frequency tabulations, cross-tabulations, and "Banner" tables, for up to 80 variables. File size is limited by disk capacity only. *(List Price: $180)*

Requires: 64K, one disk drive.

Statistical Computing Consultants
9025 Andromeda Dr.
Burke, VA 22015
(202) 872-4433

Multiple Regression

471 A file-oriented, multiple regression utility program with source code. It outputs correlation matrix, regression coefficients, and R^2, with variables and cases limited only by memory and disk capacity. *(List Price: $30)*

Requires: 64K, one disk drive.

Statistical Computing Consultants
9025 Andromeda Dr.
Burke, VA 22015
(202) 872-4433

Taskmaster

472 A program that keeps track of tasks by starting and completion dates, department, person, project, and subproject, as well as man-hours and percentage completion. It produces reports and Gantt charts on the screen or on a printer. *(List Price: $89.95)*

Requires: 64K, one disk drive.

Quala
1014 Griswold Ave.
San Fernando, CA 91340
(213) 365-9526

Datebook II

473 Schedules appointments or office space for up to 27 different professionals, from lawyers to doctors. *(List Price: $295)*

Requires: 128K, two disk drives, CP/M-86.

Software Digital Marketing
2670 Cherry Ln.
Walnut Creek, CA 94596
(415) 938-2880
Telex: 17-1852

The Organizer

474 An integrated hardware/software package consisting of a single, copyable floppy disk and a clock board. The program provides a range of functions including an editor, a filing system with rolling indexes, an alarm clock, a programmable calculator, and an appointment calendar. It handles many tasks usually assigned to an operating system, such as maintenance of directories, formatting of media, communication with I/O and mass storage devices, and error detection and recovery. The clock board provided with the system maintains the date and time of day. Over 100 alarms can be set to sound tones or display notes at scheduled times. Appointment schedules can also be printed. The manual has both tutorial and refarence sections. Keystroke by keystroke instructions are available for inexperienced users while additional examples suggest system capabilities for experienced users. A telephone dialer option is also available. Each system purchase includes a 1-year subscription to *New Tools*, a user newsletter featuring applications of *The Organizer*. *(List Price: $250 including clock board, telephone dialer $75)*

Requires: 64K, two disk drives.

Conceptual Instruments Company
4730 Worrington Ave.
Philadelphia, PA 19143
(215) 726-7856

Happy Birthday IBM PC - 8/12/82

Manufacturer/Product	List Price	Our Price
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Information Unlimited Software®		
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Speliguard	295	224
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San Jose, CA 95120
(408) 997-5033

GENERAL BUSINESS

Product Filing System

475 A program for business users who make volume purchases from suppliers and must keep track of product names, suppliers, prices, and other information associated with each product. It comes with Product *Datafile* disk containing hardware and software product listings, reference materials, and accessories. Quarterly updates are available upon request. *(List Price: $75)*

Requires: 64K, one disk drive, 80-column monitor.

Microbase Software, Inc.
P.O. Box 40353
Indianapolis, IN 46240
(317) 877-4304

Time Manager

476 A program by Microsoft that enables users to organize and plan activities more effectively while maintaining accurate and complete records for future reference. *Time Manager* can be used as a daily organizer; a personal calendar; an expense, time, and activity file; a to do list; or a tracking system. By recording events as they happen, the user can later retrieve a summary of those events as well as organize and update data. *(List Price: $100, IBM Product Center prices)*

Requires: 64K, one disk drive (printer and second disk drive recommended).

IBM Corporation
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alaska, Hawaii

Statistical Analysis Package

477 A software package that contains 24 statistical programs for regressions, distributions, hypothesis testing, and probability. It may read in data from a user-generated data file, or from a file created by the package's own data file editor. The package generates up to 24 separate reports, and may analyze up to 1,000 data points in a single run. *(List Price: $75 including a 130-page user manual)*

Requires: 64K, one disk drive.

Basic Business Software, Inc.
P.O. Box 26311
Las Vegas, NV 89126
(702) 876-9493

Statpak

478 A statistics library that gives the PC user capabilities similar to those on a time-share statistics library; it is especially useful for professional forecasting and modeling. The program includes data file utilities, mathematical utilities, and computational programs for data analysis. A standard ASCII text file format allows *Statpak* to interface directly with other system software. *(List Price: $495)*

Requires: 64K, one disk drive.

Northwest Analytical, Inc.
1532 S.W. Morrison St.
Portland, OR 97205
(503) 224-7727

C-MBA

479 A program that integrates spreadsheet, graphics, word processing, data base, and communications. Developed specifically for managers with little or no computer experience, it aids in reviewing, analyzing, and creating reports.

Users can tie into a company's computer, a financial information service, an electronic mail network, or other computer systems. The program saves information and lets users retrieve, examine, edit, or print it with a few keystrokes. Users can create business models with the spreadsheet as well as compose, edit, and print reports, letters, and business graphs. Data from the spreadsheets can be incorporated into text. *(List Price: $695)*

Requires: 256K, two disk drives, color/graphics adapter.

Context Management Systems
23864 Hawthorne Blvd.
Torrance, CA 90505
(213) 378-8277
Telex: 181149

Statistics 5.1

480 Twenty-four different statistical programs including permutations and combinations, basic statistics, moments, skewness and Kurtosis, Weibull Distribution, and Logarithmic Normal Distribution. Each program prints calculated statistical calculations onto the screen as well as a one-page report of those calculations.

Data may be entered through the keyboard or through a data file. Data files may be created by a user-generated program or the data file editor program included with the package. All programs are menu-driven and written in BASIC. *(List Price: $75 including disk, source code, and user manual)*

Requires: 64K, one disk drive.

Basic Business Software, Inc.
P.O. Box 26311
Las Vegas, NV 89126
(702) 876-9493

Property Management, Inventory Tracking

481 A property management system for real estate and an inventory tracking system for small businesses. *(List Price: Not available)*

Requires: Not available.

Worldwide Software Products
2555 Buena Vista Way
Berkeley, CA 92708

Datebook II

482 An on-line appointment book designed for physicians, dentists, lawyers, and other professionals. A menu-style display allows appointments to be scheduled, cancelled, modified, moved, or held for rescheduling. Users can search for openings by time of day, day of the week, or day of the year and display appointments for any person, schedule conferences, or print out the day's appointments. *(List Price: $295)*

Requires: 128K, one disk drive, UCSD Pascal or CP/M-86, 80-column monitor, home and clear functions, (printer optional).

Software Digital Marketing
2670 Cherry Ln.
Walnut Creek, CA 94596
(415) 938-2880
Telex: 17-1852

Milestone

483 Software that performs critical path analysis to provide project management and time scheduling information. Large projects are broken down into smaller units and analyzed in terms of duration, capital cost, manpower requirements, and other critical items. *(List Price: $395)*

Requires: 128K, two disk drives, UCSD Pascal or CP/M-86, printer, 80-column monitor.

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97 Bartlett Ave.
Arlington, MA 02174
(617) 641-0290

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GENERAL BUSINESS

MatheMagic

484 A number processing system that allows users to handle a number of mathematical applications. MotheMogic is programmable in commonly understood mathematical tarms. The program is designed for business, engineering, science, classroom, and home applications.

Features include a menu-driven format, on-line help for every command, a hardware/software configuration segment to allow full use of system peripherals. *(List Price: $89.95)*
Requires: 64K, one disk drive, 80-column monitor.

Internotionol Softwore Morketing, Ltd.
120 E. Washington St. #421
University Bldg.
Syracuse, NY 13202
(315) 474-3400

Key-Pad

485 An RPN, four-register, four-function calculator brought up on the upper left quadrant of the screen. *(List Price: $24.95)*

RCB Designs
175 S. Son Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

PBM-II

486 A project management system program that includes R&D construction, business planning, 1,000 events on critical path, bar charts, and other reports. *(List Price: $1,195)*
Requires: 64K, one hard disk drive.

AHA, Inc.
P.O. Box 2003
Sonto Cruz, CA 95063
(408) 475-7247

Fiscal

487 A personal end/or business system designed for maximum versatility. For the individual, it keeps track of checking accounts, savings accounts, credit card expenses, loan balances, and budget, and summarizes figures for taxes at year-end. It periodically prints summaries to monitor budget. For businesses, it keeps track of checking, travel expenses, loans, equipment depreciation, and general ledger. *(List Price: $174.95)*
Requires: 64K, one disk drive, 80-column monitor.

Control Technology, Inc.
8200 N. Classen Blvd. #101
Oklohomo City, OK 73114
(405) 840-3163

FINANCIAL

The 25th Hour: 25:03—Fixed Asset Manager

488 A program that maintains management information about fixed assets. Each entry is automatically indexed by classification, location, and asset number. It retains description data, asset and serial numbers, and cost and current value information. Features include built-in and user-customized depreciation methods, unlimited classification and location listings, screen prompting, and menu-driven function selection. *(List Price: $119)*
Requires: 64K, ona disk drive, 80-column monitor, printer.

SOFTREND inc.
P.O. Box 1462
Chorlottesville, VA 22902
(804) 293-5344

Investment Tax Analyst

489 A financial program that estimates federal income taxes before and after investments are made. The user may determine any tax implications up to six years. The models calculate regular, minimum, end alternate minimum taxes; investment tax credits and limitations; investment interest limitations; and other factors. Standard VisiCalc models are used. *(List Price: $125)*
Requires: 64K, ona disk drive, VisiCalc.

Advonced Investment Strotegies, Inc.
1007 Mossachusetts Ave. N.E.
Washington, DC 20002
Source: TCN 024

Tax Decisions

490 A program that analyzes complex individual income tax strategies and alternatives. Up to five strategies can be analyzed concurrently, and routine calculations are done instantly. *(List Price: $299)*
Requires: 64K, one disk drive, (printer optional).

Eogle Softwore Publishing, Inc.
110 W. Lancoster Ave.
Woyne, PA 19087
(215) 964-8660

Optimizer

491 A financial planning program that allows users to make quantitative decisions and solve business problems by optimizing an objective subject to some number of constraints. *(List Price: $200; monuol only, $15)*
Requires: 48K, one disk drive, CP/M-86 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Chompoign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

Loancomp

492 Software that computes interest and principal balance for monthly annual, and loan total periods. It computes payments required to amortize a loan, and makes true annual percantaga rate computations. It has a separate section that analyzes ordinary annuities with monthly, quarterly, semiannual, and annual payments. Looncomp prints out summarizing statements or the user's choice of three types of amortization schedules. *(List Price: $97.95)*
Requires: 64K, one disk drive, printer.

Contract Services Associotes
706 S. Euclid
Anoheim, CA 92802
(714) 635-4055

Taxplan

493 A program that computes tax liability for 1981–1985 as well as income averaging and minimum/maximum taxes for any and all yaars. It changes figures in 30 seconds and prints statements. *(List Price: $249.95)*
Requires: 64K, two disk drives, printer.

Contract Services Associates
706 S. Euclid
Anoheim, CA 92802
(714) 635-4055

The Personal Investor

494 A group of financial programs that includes portfolio manogar, electronic news terminel, and a quotation screen. The portfolio manager reports on and analyzes stock purchases, dividends, commissions, and sales transactions. The news terminal can access a variety of major publications; financial reports; and quotations on stocks, options, and bonds. The quotation screen collects stock price and volume quotes from the Dow Jones data base. *(List Price: $145)*
Requires: 128K, one disk drive, (modem, printer optional).

PBL Corporation
P.O. Box 559
Wayzoto, MN 55391
(612) 473-3769
Source: TCT-327

Perfect Companion Financial Planner System

495 An automated system for handling client information and producing financial and investment-related reports. It allows for searches and updating, and provides a word processor interface. *(List Price: $995)*
Requires: 128K, two disk drives.

Softwore Innovotions, Inc.
5505 Bloir Ooks, Box 74815
Lewisville, TX 75056
(214) 370-8601

Money Decisions

496 Software that adds 34 business and financial aids to a desk-top computer. It has three broad categories: business management, investment, and loans, as well as tutorial and help features that guide operation. The documantation uses color, charts, and illustrations. *(List Price: $199 including diskette and instructions)*
Requires: 64K, one disk drive, (printer optional).

Eagle Software Publishing, Inc.
110 W. Lancaster Ave.
Wayne, PA 19087
(215) 964-8660

Stockchart-II

497 Menu-driven stock analysis and charting with Granville's "On-Balance-Volume" analysis for identifying volume breakout and volume field trend. A price trend analysis is also provided for identifying price breakout.

The program calculates 50 days and 200 days moving averages. It can generate various types of stock charts used by investors. It also includes daily, high, low, and close price chart, volume bar graph, OBV graph, and moving average graph.

A split mode is provided for readjusting stored prices when a stock split occurs. The program uses a screen entry format for manual data entry. A telecommunications capability is provided for retrieving stock prices and volume electronically from CompuServe and the Dow Jones News retrieval system.

Each disk will store up to 265 daily prices and volume for 20 stocks. The data file uses first-in/first-out file structure ensuring the most recent; 265 daily stock prices and volume for each stock maintained. *(List Price: $350)*
Requires: 64K, two disk drives, asynchronous communications adapter, printer.

Micro-Investment Software
9621 Bowie Way
Stockton, CA 95209
(209) 952-8833

Financial Analysis Package

498 Financial analysis software designed to provide executives with a tool for making financial decisions, such as whether to lease or buy, and for analyzing capital budgeting alternatives, loan and lease payment schedules, and the effect of the Economic Recovery Tax Act of 1981 on determining depreciation schedules. *(List Price: $274.95)*
Requires: 64K, one disk drive, printer.

Execuware
4530 Park Rd. #348
Charlotte, NC 28209
(704) 525-9881

COMMUNICATIONS SOFTWARE $30

DATA COMMUNICATIONS THAT EVERYONE CAN AFFORD!

INTERNATIONAL SOFTWARE ALLIANCE HAS AN ULTERIOR MOTIVE IN PROVIDING DATA COMMUNICATIONS SOFTWARE TO END USERS FOR $30. E-LYNC AT $30 WILL ALLOW YOU TO CONVERT YOUR CP/M PROGRAMS TO IBM PC DOS. WE SINCERELY BELIEVE THAT YOU'LL REMEMBER US WHEN YOU'RE READY TO MARKET YOUR SOFTWARE.

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[LYNC] MODE: Can transfer data or program files between your IBM PC and either another IBM PC or a CP/M system running **E-LYNC** or **LYNC**. When transferring files **E-LYNC** uses field proven error detection and re-try protocol, sure to get your files across noisy phone lines or temporary disconnections. While in **LYNC** mode, both computer operators are in an immediate message mode and may type messages back and forth.

[TERM]INAL MODE: Terminal mode will allow you to connect your computer with time-sharing systems such as Source, Micronet, or CompuServe.

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TERMS: Money Order, Check, C.O.D., MC or VISA. First Class Postage included. UPS Blue add $2. C.O.D. edd $3. Californie Res. add 6%. Overseas add $5.

DISK FORMATS: 8" Stenderd, 5" Vector Graphic, IBM PC DOS, TRS 80 Mod 2 w/CP/M, North Star, Cromenco, Superbrain 3.0 DOS or later.

PHONE ORDER DESK: (805) 966-3077
10am to 2pm PST Monday-Friday.

ISA IS STILL ACCEPTING PROGRAMS FROM SOFTWARE AUTHORS

INTERNATIONAL SOFTWARE ALLIANCE
1835 MISSION RIDGE
SANTA BARBARA, CA 93103

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FINANCIAL

PLAN80

499 A program that provides financial modeling capability for planning and analysis, such as profit planning, market simulation, cost center budgeting, and energy accounting. *(List Price: $495)*
Requires: 128K, one disk drive, CP/M-86 or DOS, (printer optional).

Business Plonning Systems, Inc.
2 N. Stote St.
Dover, DE 19901
(302) 674-5500

Market Illustrator

500 A program that plots, smooths, and displays ratios and differences for the nontechnical investor. Program features includa a split screen for comparing data with program-generated indicators. Also included is a weekly historical data base mada up of ovar 130 statistics compiled from Barron's. The program includes menu-driven operations and graphics. *(List Price: $195)*
Requires: 64K, one disk drive, color/graphics adapter.

N-Squared Computing
P.O. Box 264
Silverton, OR 97381
(503) 873-5906

Stock Analyzer

501 A program that provides analysis of individual stocks through high-low-close-volume displays with linear or semilog autoscaling, price-volume indicators, relative strengths, momentums, smoothing, averaging, and point and figure charting. It includes menu-driven operations and graphics. *(List Price: $295)*
Requires: 64K, one disk drive, color/graphics adapter.

N-Squared Computing
P.O. Box 264
Silverton, OR 97381
(503) 873-5906

Doughflo

502 A multipurpose financial planning and cash flow analysis system consisting of several menu-driven programs that interact to produce reports and summaries on tax praparation, budget planning, and income analysis. *(List Price: $79.95)*
Requires: 64K, one disk drive.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

Desktop/PLAN

503 A program that uses a series of menus to guide the user through a financial modaling session. The user creates a model, beginning with row and column titles, inputting initial values, and deciding on row and column formulas for later calculation. The computed-values file can be printed out with headers, footers, pagination, and other formatting aids. The program includes a high-resolution graphing feature. The Desktop/PLAN is part of VisiSaries, a set of integrated programs by VisiCorp. *(List Price: $300)*
Requires: 64K, one disk drive, color/graphics adapter.

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
(408) 946-9000

Business Pac I

504 An assortment of general homa and business progrems designed to solve a variety of problems from interest computations to figuring stock options. *(List Price: $39.95)*
Requires: 64K, ona disk drive.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

Market Analyzer

505 Software that provides the technical anelyst with the capability of creating and comparing complex indicators. Keystroke functions includa exponential smoothing, arithmetic averaging, ratios, sums, differences, transforms, detrends, and time-lag analyses. It generates trading index and advance-decline lina indicators. The program incorporates menu-driven operations and graphics. *(List Price: $295)*
Requires: 64K, one disk drive, color/graphics adapter.

N-Squored Computing
P.O. Box 264
Silverton, OR 97381
(503) 873-5906

Micro-DSS/Finance

506 A comprehansive menu-driven financial modeling package that features "what-if" calculations, 32,000-cell built-in financial functions, command files, editor, color/graphics capabilities, and report generation. Date files can be plotted with optional CrophPower. A related program, Consultont's Edge, creates customized menus for the Micro-DSS/Finonce package. *(List Price: $1,500)*
Requires: 128K, two disk drives.

Ferox Microsystems
1701 N. Ft. Myer Dr.
Arlington, VA 22209
(703) 841-0800

Compu-Loan

507 An amortization system that analyzes regular or irregular loans while considering tax consequences of borrowing. It aids in financial decision-making and is fully documented. *(List Price: $50)*
Requires: 32K, one disk drive, (printer optional).

Benchmork Creotions
P.O. Box 31861
Roleigh, NC 27622

The Financier

508 A financial record-keeping system designed for people with no computer or accounting background. The program uses data base sorting and indexing techniques for storing information and producing reports on bank account activities, budgets, investments, taxes, personal proparty, and insurance. The program includes automatic input-error checks and updates on relevant financial summaries. *(List Price: $180)*
Requires: 64K, two disk drives, 80-column monitor.

Finoncier, Inc.
11 Flonders Rd.
Westboro, MA 01581
(617) 366-0950

Plus

509 Accounting packages available for general ledger, accounts payable, accounts receivable, fixed assets, payroll, and Eosytrak, an all-purpose tracking system. All programs are menu-driven and come with manuals that include screen explanetions, installation guides, glossaries, and an accounting theory refresher. Support features include a toll-free hot-line newsletter, and updated tachnical bulletins. *(List Price: $350* eoch, *Easytrak $125)*
Requires: 48K, two double-sided disk drives.

Plus Computer Technology, Inc.
6900 N. Austin Ave.
Chicogo, IL 60648
(312) 647-0988

High Yield

510 A system that manages mutual and money market funds. It anables users to review portfolio, and it stores transaction data, including mutual funds, IRA, and Keough plans. *(List Price: $75)*
Requires: 64K, two disk drives.

Hourgloss Systems
P.O. Box 312
Glen Ellyn, IL 60137
(312) 690-1855

Invest

511 A portfolio management and reporting system specifically designed for bonds, cartificates, or other securities. It can be used for home investments. Verious menus allow users to enter purchases, repurchases, interest collection, and sales. Each portfolio can contain up to 600 securities. Daily accruel and compounding are possibla. Detail transaction history is kept for historical tracking and enalysis. *(List Price: $70; documentation only, $10)*

Requires: 64K, two disk drives.

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
(913) 843-5863

The 25th Hour: 25:04—Financial Calculator/Analyzer

512 A program that calculates present and future values of investments, loans, and annuitles. It performs bond calculations, prorates amounts over deted periods, and handles simple interest problems. Its features include displaying and printing amortization schedules, performing optional balloon calculations, and "what-if" data manipulation on any calculation. Designed for nontechnlcal users, the system includes scraen prompting and menu-driven function selection. *(List Price: $89)*

Requires: 64K, one disk drive, printar, 80-column monitor.

SOFTREND inc.
P.O. Box 1462
Chorlottesville, VA 22902
(804) 293-5344

Budget/Tax Deductions Record

513 A record keeping program to keep track of budgets and tax-deductible expanditures. Deductions can be listed and categorized. *(List Price: $39.95)*

Requires: 64K, one disk drive.

fnternotional Computers
13048 Olive Blvd.
St. Louis, MO 63141
(314) 878-8838

Market Time

514 A system that anelyzes the stock market and plots moving averages on monitor or printer. It includes en expandable data base of NYSE items. Users can personelize statistics. *(List Price: $75)*

Requires: 64K, two disk drives.

Hourglass Systems
P.O. Box 312
Glen Ellyn, IL 60137
(312) 690-1855

Stock Options Trading

515 A financial program that enelyzes put and call options, profit potential of spread and hedge strategies, and covered or uncovered writing. It also identifies undervalued options. *(List Price: $49)*

Requires: 48K, one disk drive.

Finsoft
16-06 Quail Ridge Dr.
Ploinsboro, NJ 08536

Practical Business, Common Financial/Statistical, Personal/Home

516 Three software packages. *Proctical Business Progroms* calculates business and cost projections and includes project planning capabilities. *Common Flnancial/Statistical/Decision Moking/Projections ond Forecasting Progroms* is a statistical and forecasting package, and *Personal/Home Programs* features interest and forecasting capabilities coupled with investments and bonds costs calculations. *(List Price:* Practical Business Programs *$70,* Common Finencial/Statistical Programs *$75,* Personal/Home Programs *$50)*

Requires: Not available.

Easy Dato
812 E. Cliff
Euless, TX 76039
(817) 283-1915

Dow Jones Toolkit

517 A stocks monitoring program that automatlcally interrogates tha Dow Jones data base for price news and historical data. The data is arranged into *VisiColc* readable form. A tutorial section expleins how to do some calculetions, compute the value of a portfolio, end use the "what if" capability of *VisiColc. (List Price: $150; manual only, $25)*

Requires: 64K, ona disk drive, *VisiCalc.*

Automoted Office Systems
602 Lookout Dr. #213
Richardson, TX 75080
(214) 669-9966

Municipal Finance

518 A series of seven programs that perform the analysis necesssary to structure municipal bond issues. They are designed for investment bankers and financial advisors who prefer on-site microcomputer analysis to off-site time-sharing with large computers. *(List Price: $10,000)*

Requires: 128K, two disk drives, serial interfece, printer.

B.A. Nicholson & Compony
271 Modison Ave. #1007
New York, NY 10016
(212) 889-7535

Micro-Tax

519 An income-tax preparation package dasigned to meet the needs of, and based on the design specifications of, registered agents, certified public accountents, and tax attorneys. The peckege offers three levels: individual, profasslonal, and partnership/corporate. Annual updates are availeble. *(List Price: Individuol $195, professionol ond partnership/corp $1,000 each)*

Requires: 64K, two disk drives, printar.

Microcomputer Taxsystems, Inc.
22458 Venture Blvd., Ste. E
Woodlond Hills, CA 91364
(213) 704-7800

Loan Amortization

520 A finance program that allows users to enter three of four variebles naeded to compute loan amortization and solve the fourth variable. The four variebles are emount of loan, length of loan, interest rate, and monthly payment. The program permits any number of periods in a year and provides on a period-by-period basis the payment, interest, principal reduction, and total principal remaining.

The program computes the total payments made and the cost of the loan. This output can be directed to the screen or a printer. Tha program can be used with the manufacturer's other financiel software programs. *(List Price: $100)*

Requires: 64K, one disk drive, (printer optionel).

Design Data Systems Corporation
5270 N. Pork Ploce N.E.
Cedor Ropids, IA 52402
(319) 373-1571

Stockplot

521 A program that provides storage of high, low, and close stock markat quotations or commodity quotations and printing of a bar chart. The price axis is scaled and dates are printed on the time axis. A moving average is calculated and plotted simultaneously with the bar chart to yield buy and sell signals. An option provides point and figure chart plotting of the same data, and the point reversal parameter can be chosen arbltrarily. Sevaral years of data can ba stored on one disk. *(List Price: $99)*

Requires: 64K, two disk drives, printer.

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

ACCOUNTING AND INVENTORY

The Software Fitness Program

522 A package of sevan comprehensive, interactive financial management programs. *Accounts Payable* allows users to measure the impact of thair company's cost distribution and cash flow requirements. *Accounts Receivable* produces invoices and statements as well as detailed aging reports. *General Ledger* summarizes accounting data to show users their money flow.

The *Inventory System* aids users in controlling thair purchasing and sales decisions with access to current balances and comprehensive valuation statistics. *Sales Order Processing* moves orders automatically from entry through packing, varification, and invoicing. It offers users e complete range of order processing including returned goods and back orders. *Payroll* helps users meet government reporting requirements in paying hourly end salaried employees. It processes checks and allows labor expense distribution and raporting by department, job, and phase. *Job Cost* automatically records costs and revenues as users process other accounting data. *(List Price: Not available)*

Requires: 64K, ona disk driva, business BASIC interpreter, DOS or CP/M-86.

Open Systems, Inc.
430 Oak Grove #409
Minneapolis, MN 55403
(612) 870-3515
TWX: 910-576-1743

ProCalc

523 *ProCalc* is a financial planning and report ganerating program that allows up to 50,000 antries in a model. Uslng multiple windows and files, *ProCalc* can directly access over 100,000 entries. Text entries are not limited to column width. The system allows access to more than one modal simultaneously, and up to six screen "splits" may be displayed on the screen at one time. Features include business function calculations such as present and future values, amortization payments, and depreciation. The program interfaces with SPI's *LogiQuest*, *Asset*, and *Word Processing* packages. Included in the system are a text editor, file manager, and disk formatting utility.

Tha system comes in two versions: with the UCSDp-System or a turnkey version that comes without it. *(List Price: $350; manual only, $35)*

Requires: 64K, one disk drive.

Softwore Products Internotional
10343 Roselle St. #A
Son Diego, CA 92121
(714) 450-1526

Inventory Control

524 A program by Peachtree Software that is designed to help a small business improva merchandise control and reduce inventory investment, thereby improving customer service. Records contain vendor and cost data, three pricing levels for sales, reorder levels, and year-to-data and period-to-date sales amounts and quantities. The program may be customized to suit a company's needs. *(List Price: $595, IBM Product Center prices)*

Requires: 64K, two disk drives, 80-column monitor, printer.

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alosko, Hawoii

General Ledger

525 Software that allows up to 99 dapartmantal income and expense statements. The user has a 4-, 5-, or 6-digit account number and he or she provides the account dascription. The program can handle a maximum of 200 customers and 1,400 transactions, and interfaces with the manufacturer's other applications programs. *(List Price: $485)*

Requires: 64K, two disk drivas, 80-column monitor, 132-column printer.

Computer Systems Design, Inc.
P.O. Box 735
Yokimo, WA 98907
(509) 575-0320

Asset

526 An integrated series of accounting progrems that function separately or as an entire accounting system. The series includes General Ledger, Accounts Receivable, Accounts Payable, and Inventory Control packages. All programs in the series feature expandable and contractable files and function on floppy or hard disk systems. The entire *Asset* series interfaces with SPI's *LogiQuest*, *ProCalc*, end *LogiCalc* programs.

The programs coma in two versions. SPI will include the turnkey UCSDp-System operating system if required. The system includes tha UCSDp-system, a text editor, file manager, and disk format. *(List Price: Asset $1,290; monuals only $50; $390 eoch)*

Requires: 64K, two disk drives.

Softwore Products Internotional
10343 Roselle St. #A
Son Diego, CA 92121
(714) 450-1526

Job Cost

527 A software package that handles budget quantities and amounts as well as month and job-to-data quantities. Users can record this system manually. All classification codes and descriptions are under user control. It handles up to 50 classes and 35 jobs. The program is designed for novice usars and can interface with the manufacturer's *General Ledger* program. *(List Price: $485)*

Requires: 64K, two disk drives. 80-column monitor, 132-column printer.

Computer Systems Design, Inc.
P.O. Box 735
Yokimo, WA 98907
(509) 575-0320

TCS Accounting Software

528 An accounting package that includes ganeral ledger, accounts receivable, accounts payable, and payroll. The program ganerates reports. Sample deta, manuals, and a year's subscription to *TCS Debits ond Credits*, a quarterly newsletter, are included. *(List Price: $439)*

Requires: 64K, two disk drives.

Rocky Mountain Softwore Systems
P.O. Box 3282
Wolnut Creek, CA 94598
(415) 625-1592

Payroll System

529 A program that handles a wide range of business situations, from reimbursing employees for out-of-pocket expenses and paying bonuses, to kaaping track of vacation time, loans, advances, and repayments.

The program is also designed for quick reprogramming. Custom state and local tax calculation programming is included. Users have complete access to the tax tables, end the original commented source code is included.

Input data can be verified and edited, if necessary, before being sent to the system. A doubla-keying varification procedure is provided for alimination of data entry arrors. A self-backup feature keeps a complete record of the details of each pay period.

Other program features include up to ten department names per disk, up to five automatic fixed deductions with a different amount for each dapartment, and up to five special pay amounts or deductions for each employae each period.

The capacity of the system is 150 employees per 100K of disk storage space, with free space for a copy of the master file on the disk if automatic backup is used. *(List Price: $400)*

Requires: 48K, two disk drives.

Datosmith
P.O. Box 8036
Shawnee Mission, KS 66208
(913) 381-9118

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General Accounting

530 Software designed for small businesses and professionals. Users make journal entries into the system and the program automatically posts ledgers, prepares financial statements, and closes the books. *(List Price: $425, IBM Product Center prices)*

Requires: Not available.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 fllinois
447-0890 Alasko, Hawoii

Discounted Cash Flow

531 A program that solves over 40 business and financial analysis problams, including yield to maturity and true rate of return, with adjustments for variable income/expenditures in multipla time periods. *(List Price: $49 including documentotion)*

Requires: 64K, two disk drives, DOS or CP/M-88.

Micrasystems
7201 87th Ave. SE
Mercer Islond, WA 98040
(206) 232-1513

General Ledger

532 A menu-driven accounting program that generates a flexible chart of accounts. It posts profit and loss automatically, and keeps a cash account in balance. it generates budget comparison raports, previous yeer comparison reports, and income and expense raports. Graphics capabilities are available. *(List Price: $349)*

Requires: 48K, one disk drive, printer.

International Softwore Allionce
1835 Mission Ridge Rd.
Sonta Barbara, CA 93103
(805) 966-3077

Infotory

533 A menu-driven inventory management system with a data management feature that offers users the ability to create custom reports. Month-to-date and year-to-date sales and cost of sales information is summerized by departments, product groups, or other categories established by the user. Inquiries displaying the status of an item can be made while running other programs. Documentation includes screen illustrations for situations encountered when using the system. *(List Price: $425)*

Requires: 64K, two disk drives, 132-column parallel printer.

S.S.R. Corp.
1600 Lyell Ave.
Rochester, NY 14606
(716) 254-3200

HAL1000 Business Software

534 Fiva separate business modules: *1001 General Ledger, 1002 Accounts Receivable, 1003 Accounts Payable, 1004* fnventory, *1005 General Business Softwore.*

General Ledger records business transactions and generates income statements and balance sheets. The program can provide monthly, quarterly, and yearly summary reports. *Accounts Receivable* provides detail and summery reports to interface with *General Ledger*. *Accounts Payable* prints checks from the bank. *Inventory* records and raports either perpetual or periodic inventories. *General Business Softwore* provides four depreciation schedules, amortization tables, internal rata of return, present and future values, ratio analysis, laase/buy dacision, and budgeting. All programs may be customized for the user's specific applications. *(List Price: Inventory $695, all others $495 each)*

Requires: 48K, one disk drive.

Keller Softwore
1825 Westcliff Dr.
Newport Beach, CA 92660
(714) 975-4943

Versareceivables

535 A menu-driven accounts receivable system that prints statements, invoices, and summary reports. Users may choose to invoice all customars, print customer mailing labels, generate monthly or periodic statements and invoices, allow for partial payments on opan invoices, print out all commonly used accounts receivable reports, and keep a history of accounts, both current and aged. The program interfaces with other programs by the manufacturer. *(List Price: $99.95)*

Requires: 48K, two disk drives, DOS or CP/M-86.

H&E Computranics Inc.
50 N. Pascock Rd.
Spring Valley, NY 10977
(800) 431-2818, (914) 425-1535

Solomon Series Software

536 An integrated accounting package built around a singie data base (MDBS). *Solomon* f includes general ledger, accounts payable, eccounts receivable, payroll, fixed assets, order entry invoicing, cash receipts/disbursements, and neme and address maintenance; *Solomon II* adds job costing; *Solomon IIf* adds general accounting and inventory control. *(List Price: Solomon I $2,595, Solomon II $3,495, Solomon III not ovoiloble)*

Requires: 64K, Baby Blue, one hard disk driva.

TLB, Inc.
1120 Commerce Pkwy.
P.O. Box 414
Findloy, OH 45840
(419) 424-0422

General Ledger

537 A software package by Paachtree Softwara that keeps deteiled records of financial transactions and ganerates a balance sheet and income statement, providing timely information on a company's status. Features include menu instructions, password security, departmental income statements, and the ability to compare prior-year budgets. At tha end of the accounting period, *General Ledger* generates management reports including Trial Balance, Transaction Registars, Balanca Shaet, and Income Statements. *(List Price: $595, fBM Product Center prices)*

Requires: 64K, two disk drives, 80-column monitor, printer.

fBM Corporation
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Aloska, Hawoll

Accounts Payable

538 A packaga by Peechtree Software that keeps track of current end old accounts, incorporating programs to maintain a complete record for each vandor. The record provides information on due dates, discount dates, and cash requirements. The program automatically prints payment checks and maintains a check register. Prompts allow inexperienced operators to use the system with minimal instruction. *(List Price: $595, fBM Product Center prices)*

Requires: 64K, two disk drives, 80-column monitor, printer.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alasko, Hawoii

Accounts Receivable

539 An open-ltem financial package that ages invoices thraugh 120 days and prints statements and labels. It can handle a meximum of 200 customers and 1,400 transactions, and is designed for novice users. It interfaces with the manufacturer's *General Ledger* program. *(List Price: $485, demonstration disk ond documentotion $75)*

Requires: 64K, two disk drives, 80-column monitor, 132-column printer.

Computer Systems Design, fnc.
P.O. Box 735
Yokima, WA 98907
(509) 575-0320

ACCOUNTING AND INVENTORY

Count/Up

540 A general ledger, accounts payable, and eccounts receivable accounting system. Tha system consists of 24 programs and five menus, permitting 53 individual report records and up to 750 account numbers. It uses hash-coded index files and allows the user complete freedom in designing ledgers. *(List Price: $1,700; general ledger only, $550; accounts payable and accounts receivable $1,450)*

Requires: 64K, two disk drives.

Squire, Buresh Associotes, Inc.
P.O. Box 2029
Worcester, MA 01613
(817) 832-6430

Inventory Control

541 An application package by BPI Systems, Inc. that pravides quick eccess to the status of eny inventory item, includlng list prices and quantity on hand, enabling sales orders to be checked end changed as they are antered. Customer invoices can be created and stock levels adjusted automatically. The program can alart users to items that must be reordered, produce the appropriate purchase ordars, and log back orders end merchandise received. *(List Price: $425, IBM Praduct Center prices)*

Requires: 64K, two disk drives, printar.

fBM Corporation
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alaska, Hawoii

Star System 1

542 An integrated eccounting systam that consists of four modules: General Ledger, Accounts Receivable, Accounts Payable, and Payroll. All modules feature easy to use menu-driven programs. General Ledger with cash receipts and disbursemants has check writing capability. It can stand alone or integrate with other Star accounting modules. Accounts Receivable offers an order entry function. Accounts Payable produces purchase orders. Payroll maintains all federal, state, and local tax tables, and produces a tax deposit history. *(List Price: Complete system $1,250, each module $400)*

Requires: 48K, two disk drives, 80-column monitor, 132-column printer.

Stor Computer Systems
18051 Crenshaw Blvd.
Torrance, CA 90504
(213) 538-2511

Order Entry

543 A program that performs order entry/point of sale purchasing with reorder point and recaiving. It includes 1,000 inventory items and 100 vendors and listings. *(List Price: $349)*

Requires: 48K, one disk driva, printar.

DP Softwore Associotes
8459 N.E. 3rd St.
Coral Springs, FL 33065
(305) 753-5893

Small-Business Accounting

544 An accounting program aimed et small businesses that is based on Dome Bookkeeping Record #612. The program handles income, expenses, and payroll. *(List Price: $59.95; documentotion only, $15)*

Requires: 64K, one disk drive.

Howe Softwore
14 Lexington Rd.
New City, NY 10956
(914) 634-1821

Master Ledger

545 A menu-driven ganeral ledger systam with three-level password security and a user-defined chart of eccounts. These integrated programs are parameter driven and can be tailored by tha user for custom financial statements. Accounting transactlons are input via balenced batches end ere corrected and posted at the user's preferenca. Raporting features include standard PNL raports, chart of eccounts, general ledger and subledger listings, payable and receivable agings, and amortizations. For users wanting to run several accounting tasks end/or to charge their clients for this use, the program logs actual machine time end total pages printed. *(List Price: $600 Canodion)*

Requires: 64K, two disk drives, printer.

Micro Masters Softwore Ltd.
P.O. Box 513
Edmonton, Alberto
Conodo T5J 2K1
(403) 922-3088

Accounts Receivable

546 An application package by BPI Systems, Inc. that helps manage e company's cash flow by tracking current end past-due receivables. The program pravides the information necessary for accurata credit decisions, prepares monthly customer statements end past-due notices, maintains detailed customer files, and produces rapid analyses of customer account status. *(List Price: $425, fBM Product Center prices)*

Requires: 64K, two disk drives, printer.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alasko, Hawaii

Versainventory

547 A menu-driven inventory control system thet keeps track of ell information related to inventory, prints ell necessary reports, and gives users instant access to items that directly affect sales. Users can update the program through menu-driven processes. Versainventory interfaces with the manufacturer's other products. *(List Price: $99.95)*

Requires: 48K, two disk drives, DOS or CP/M-86.

H&E Computranics Inc.
50 N. Pascock Rd.
Spring Valley, NY 10977
(800) 431-2818, (914) 425-1535

Accounts Payable

548 A simplified eccounts payable system for home or small business use. It allows for up to 99 vendors to be entered, and pays only one invoice per vendor per check. The system includes pre-check and post-check registers and prints checks on the delux check format #1002. *(List Price: $125)*

Requires: 64K, one disk drive, printer.

Solution Software Systems
3930 Whispering Trails
Hoffmon Estotes, IL 60195
(312) 893-5111

Star System 5

549 A legel time-keeping and billing program that tracks all payments, fees,costs, eged accounts, and unbilled time. It prepares bills, reports on attorney productivity, produces prebilling ledgers, and post-billing recap reports. It hendles up to 1,500 case matters, 99 attorneys, five billing rates, and pravides for a flexible definition of up to 250 work codes. System 5 will integrate with Stor System 1 General Ledger. *(List Price: $950)*

Requires: 48K, two disk drives, 80-column monitor, 132-column printer.

Stor Computer Systems
18051 Crenshaw Blvd.
Torrance, CA 90504
(213) 538-2511

The Boss

550 A finencial accounting package that includes General Ledger, Accounts Receivable, and Accounts Payable modules. XEDEX will provide user support vie a technical hot line service. *(List Price: $2,495, with Baby Blue $3,095)*

Requires: 64K, Baby Blue, ona hard disk drive.

XEDEX Corporation
222 Rt. 59
Suffern, NY 10901
(914) 368-0353

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emely versatile multi-purpose al planning and cash flow analysis consisting of several menu-driven ms that interact to produce essen- orts and summaries. Excellent for paration, budget planning, income pense analysis.

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single or double width labels. Easy ntry and machine sorts by Zip Code abetically. Holds up to 1000 and addresses per diskette.

ne Drive, PC-DOS **$29.95**

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nal reminder/calendar and organizer. Auto report feature to ep you on time and on schedule.

ne Drive, PC-DOS **$19.95**

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al or Business telephone list that ces with the Hayes Smartmodem -dial your phone. Stores 1000 and numbers on diskette for recall.

ne Drive, PC-DOS **$19.95**

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Etch is a creative drawing program allows the user to easily create and on diskette) hi-resolution graphic chings. Video Etch has applications neering, Drafting, Education, cs programs development and l areas. Stored etchings may be from other Basic programs. Video great fun as well!

ne Drive, PC-DOS
Graphics Monitor Board **$29.95**

Prosthesis

An adult adventure game in a clinical setting that's a sure prescription for stimulating, X-RAYted fun! Rushed to you in a plain brown wrapper, you must state or write that you are over 21 years of age.

64K, One Drive, PC-DOS **$29.95**

U.S. Motors

Adventurous game where you control the finances of a failing American auto manufacturer. Your goal is to lead the corporation from bankruptcy to success!

64K, One Drive, PC-DOS **$19.95**

Word Whiz

A programmed learning spelling program designed for children in first through sixth grades. Word Whiz self-adapts to accommodate each child's skill level while offering a challenge, increasing proficiency and reinforcing new concepts.

64K, One Drive, PC-DOS **$19.95**

States 'n Caps

Interactive programmed learning. Assists children to quickly learn America's states and capitols. Fun!! Hi-res graphics and sound enhance the learning experience.

64K, One Drive, PC-DOS
Color/Graphics Monitor Board **$19.95**

Program Pacs $19.95ea

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ACCOUNTING AND INVENTORY

PR-1

551 A payroll system that enables a company to prepare payroll for hourly, salaried, and commissioned employees while accumulating information for tax reporting. It generates monthly, quarterly, and annual returns to be filed with local, state, and federal governments. It prepares employee W-2 forms and maintains up-to-date personal and payroll Federal withholding tables, FICA tables, and precomputed or user-generated withholding tables for any state or locality. *(List Price: $248)*

Requires: 64K, two disk drives, 132-column printer.

Micro Architect Inc.
96 Dothan St.
Arlington, MA 02174
(617) 643-4713

General Ledger, Accounts Receivable

552 The manu-driven General Ledger program includes departments; monthly, quarterly, or year-to-date comparisons of expense items to month-by-month budget; repeating transactions; and monthly audit trail. The manu-driven Accounts Receivable interfaces with the General Ledger and prints aging reports and statements. Both programs include videotaped and written instructions. *(List Price: $500 each)*

Requires: 64K, two disk drives, printer.

Fogle Computing Corporation
357 E. Blackstock Rd.
P.O. Box 5166
Spartanburg, SC 29304
(803) 574-4950

Versapayroll

553 A menu-driven payroll system that keeps track of all government-required payroll information. When given employee names, the program does payroll calculations and displays totals on the screen. The user may accept totals, print/not print out checks, and post/not post totals to the Versaledger system.

Users have the options of overriding payroll deductions and receiving summaries of any employee's year-to-date payroll totals. The program interfaces with the manufacturer's other programs. *(List Price: $99.95)*

Requires: 48K, two disk drives, DOS or CP/M-86.

H&E Computronics Inc.
50 N. Pascack Rd.
Spring Valley, NY 10977
(800) 431-2818, (914) 425-1535

Big Four

554 A standard accounting package that includes general ledger, accounts receivable, accounts payable, and payroll systems. The program supports hard and floppy disks. It includes sample data for training and demonstration purposes, self-teaching manuals, automatic prompts for creating disk backups, and master file recovery programs for correcting hardware or operator errors. *(Available to dealers only; price determined by dealer's installation, training, and support)*

Requires: 64K, two disk drives, 132-column printer.

TCS Software
3209 Fondren Rd.
Houston, TX 77063
(713) 977-7505

Bonus Accounting

555 A general ledger accounting package that allows users to set up ledger accounts for home or business. Features include balance sheet and financial statements showing current balance, month-to-date, and year-to-date totals for each ledger account. Year-end totals for tax-deductible expenses and income can be calculated, and a transaction register shows posting details. A data-entry screen allows users to enter check registration information. *(List Price: $150)*

Requires: 64K, one disk drive, 80-column printer.

The Programming Shop
1164 Umbarger Rd.
San Jose, CA 95121
(408) 226-2157

Arnie

556 An accounts receivable system that handles sales and cash receipts, prints statements to customers, and furnishes reports for management of accounts receivable and cash flow. The program is designed for secretaries or bookkeepers with no knowledge of computers and limited knowledge of accounting.

The program can handle up to 163 customers, 652 invoices, and 1,280 transactions using the 40-track, double-density disk format. When users have fewer transactions, space can be used for more customers or invoices per customer. Features include operator-oriented programs and automatic posting to general ledger when the manufacturer's general ledger program is used. No programming knowledge is required for installation. *(List Price: $395 including program disks and instructions)*

Requires: 48K, two disk drives, parallel printer adapter, printer for 8½- by 11-inch paper.

Information Automation Corporation
2900 Turtle Creek Plaza #500
Dallas, TX 75219
(214) 559-2710

Glenda

557 A set of programs that produces financial statements and supporting information for businessmen and clerical workers with little knowledge of computers. It is based on transactions (checks, deposits, cash receipts, sales, and other journal entries) entered into the PC.

Updating of account balances and financial statements can be printed after entering journal entries. Users can run intermediate financial statements any time during the month. Users assign their own account numbers and arrange the captions and subtotals on the financial statements to meet their needs or match present statements.

Self-prompting programs guide users with detailed, nontechnical questions and statements. Once a task is completed, the program asks users if they are finished. Users are guided through the program again or returned to the system menu to select another task. *(List Price: $395 including program disk and instructions)*

Requires: 48K, two disk drives, parallel printer adapter, printer with 8½- by 11-inch paper.

Information Automation Corporation
2900 Turtle Creek Plaza #500
Dallas, TX 75219
(214) 559-2710

Payroll (Broderbund)

558 A payroll program that has a 300-employee, 15-division capacity, with five taxable categories and 30 deduction types. It computes federal and state income taxes for all 50 states through built-in tax formulas. Low-cost updates are available. It prints checks, check register, W-2 forms, and quarterly and summary reports. Although it is written in UCSD Pascal, it does not require a UCSD Pascal system. A hard disk is compatible. *(List Price: $395)*

Requires: 64K, two disk drives, printer.

Broderbund Software, Inc.
Business Software Division
1938 Fourth St.
San Rafael, CA 94901
(415) 456-6424

TCS Accounting Software

559 A four-module integrated accounting system that includes general ledger, accounts receivable (includes complete invoicing), accounts payable, and payroll (includes multiple statements). *(List Price: $439 including sample data and manual, individual modules $169)*

Requires: 64K, two disk drives, 132-column printer.

Rocky Mountain Software Systems
1280C Newell Ave. #147
Walnut Creek, CA 94596
(415) 625-1592

ColorBIZ Inventory Application Software

560 A business application program that features data base ratrieval capability; a browse feature for selectiva scanning; password security that restricts access to sensitive data; error checking; single-kay responses; automatically identified reordar information; and user dafinable soft keys. On-line directions are also included. Defined reports include stock status, on order/order recommendation, mastar parts listing, invantory analysis, and physical inventory. Usage and margin analysis are provided by month and year to date. *(List Price: $498)*
Requires: 64K, two disk drives, printer.

ColorCorp
208 N. Berkshire
Bloomfield Hills, MI 48013
(800) 521-0793, (313) 335-2255

General Ledger with Payables

561 Software that has a 2,000 ledger account capacity with unlimited journal entries, 200 open payabla accounts, 1,900 open invoices, 1,000 checks per disk, values to $9,999,999.99, and user-definable account numbers up to 10 digits. It prints checks, journal audit trails, balanca shaats, income statements with budget, history, month and year-to-date percentage and dollar change, department reports, and check register. Though written in UCSD Pascal, a UCSD Pascal system is not raquired. A hard disk is compatible. *(List Price: $495)*
Requires: 64K, two disk drives, printar.

Broderbund Softwore, Inc.
Business Softwore Division
1938 Fourth St.
San Rafael, CA 94901
(415) 456-6424

Personal Computer/Personal Finance Program

562 A program that manipulates, integrates, and files data from checkbooks, bank statements, credit card reports, and othar financial information into an accounting system. The information may then be displayed as raports on budget performanca, expense and income histories, and cash flow. Color bar graphs may be displayed. *(List Price: $95)*
Requires: 64K, one disk drive, printer, 80-column monitor.

Best Programs
P.O. Box 2370
Alexandria, VA 22301
(703) 549-3663

Payroll (Applied Software)

563 A program that can handle 200 employees in 99 departments, working in multiple states, undar five different pay rates. It also handles vacation, sick, and nontaxable pay rates. Included are six deduction fields and federal and state unemployment tax. *(List Price: $495, manual and demonstration disk $50)*
Requires: 64K, (othar requirements not available).

Applied Software Technology
223 Hunnewell St.
Needham, MA 02194
(617) 444-5551

Micro Accounting Series, Bill of Materials

564 Six software packages. The "Micro" accounting software series includes *MicroLedger*, a general ledger package; *MicroPac*, an accounts payable package; *MicroRec*, an accounts receivabla package; *MicroInv*, an invantory control package; and *MicroPers*, a payroll and personnel package. *Bill of Materials* is an expandable inventory system that holds accounts filed by item. All programs are written in BASICA. A modifiabla source code is provided with every package. One-year warranty. *(List Price: Micro-series $140 each; Bill of Materials $350)*
Requires: 64K, two disk drives.

COMPUMAX Associates, Inc.
P.O. Box 7239
Menlo Park, CA 94025
(415) 854-6700

Inventory Control

565 An invantory control system that includes 1000+ lina itams, total and department list, reorder, backorder, YTD dollar amount and number, PTD dollar amount and number, margin, percent of departmental sales, last sale date, and last received date. *(List Price: $295)*
Requires: Not available.

Orgonized Bits
P.O. Box 303
Savannah, MO 64485
(816) 324-4314

Payroll Master

566 A payroll management program that can process up to 200 employees. It supports six user-defined deduction fields and gives dafinable pay rates for each employee. Multistate and mixed-department labor analysis ara also offered. A Tecmar hard disk varsion is also available. *(List Price: $495)*
Requires: 64K, two disk drives, printer.

ASTEC
223 Hunnewell St.
Needham, MA 02194
(617) 444-5551

Data Manager, General Ledger

567 *Doto Manager* allows users to define, enter, update, sort, select, and print reports from a data base of their own design. *General Ledger* aids in keeping account books and features data entry and error correction, trial balance, fast post, and various comprehensive reports. Automatic error detection helps keep books in balance. Tha program writes checks and makes journal entries in one operation. Both programs work with the manufacturer's *Payroll* program. *(List Price: Data Manager $450, General Ledger $300)*
Requires: 64K, two disk drives.

DATASMITH
P.O. Box 8036
Shawnee Mission, KS 66208
(913) 381-9118

Invoice Program

568 A business application program that creates printed invoices on two different printed forms, or will generate a printed invoice form. *(List Price: $95)*
Requires: 64K, two disk drives, printar.

Micro Research, Inc.
6938 S. Yukon Ct.
Littleton, CO 80123

Inventory Control Program

569 A complete inventory control program that functions as an on-line NCR cash register to generate invoices. The program generates a daily transaction register that can be used to update the general ledger. Features include complete records of stock ordered, received, and sold; purchase order and vandor tracing; yearly totals in dollars; sales-tax summaries; numarous reports showing stock dispositions; and cash registar emulation and invoica genaration. Designed for small- and middle-size businesses, it keeps track of all stock and transactions. *(List Price: $179.95)*
Requires: 64K, one disk drive, printer.

Alpha Computer Service
P.O. Box 2517
Cypress, CA 90630
(714) 894-6808

Accounts Receivable

570 Software that accommodates up to 1,000 customers and 2,000 transactions. Features include balanca forward with aging to 120 days and sales summary by transaction type with 60 types allowed. The program uses Nebs form #9060 for statements. *(List Price: $249)*
Requires: 64K, one disk drive, printer.

Dotocount, Inc.
2207 Anderson Rd.
P.O. Box 2312
Opelika, AL 36801
(205) 749-5641

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ACCOUNTING AND INVENTORY

Sapana-Payroll-Track-I

571 Payroll software that stores 100 employee records on a single-sided floppy disk and 200 on a double-sided floppy disk. It is menu-driven and includes a user manual. Customizing is available at additional cost. *(List Price: $49)*
Requires: 64K, one disk drive, printer.

Sopono Micro Softwore
P.O. Box 748
Quincy, IL 62301
(217) 224-4337

Sapana-Expense-Track-I

572 A menu-driven program that stores 2,500 expense entries on a single-sided floppy disk, 5,000 on a double-sided floppy disk, and includes 99 expense categories, 99 different methods of payment, and deductible or nondeductible. *(List Price: $29 including manual)*
Requires: 48K, one disk drive, (printer optional).

Sopono Micro Softwore
P.O. Box 748
Quincy, IL 62301
(217) 224-4337

FMS II

573 A program for entering a month's checking, charge card, and cash accounts, and includes instant error correction. Users can audit all files by code and month with year-to-date totals. The program includes a self-prompting error-avoiding entry system, screen and printer routines, budget manager, search, account auditor, checkwriter, and item and code macros. It is single- or dual-disk compatible. *(List Price: $89.95)*
Requires: 64K, one disk drive, (printer optional).

Computerized Monagement Systems
1039 Cadiz Dr.
Simi, CA 93065
(805) 526-0151

Graphics General Ledger System

574 Software that accommodates up to 400 accounts and 1,100 transactions. The program does all standard G/L reports plus line or bar graphs for the current year, prior year, or budgets. Line graphs require a graphics board. *(List Price: $349)*
Requires: 48K, one disk drive, printer.

Dotocount, Inc.
2207 Anderson Rd.
P.O. Box 2312
Opelika, AL 36801
(205) 749-5641

Easy

575 An integrated system of three modules for general ledger, accounts payable, and accounts recalvabla designed to improve and upgrade present accounting packages for business executives, accountants, and bookkeepers. It provides up-to-the-minute, detailed financial and management reports. Current to the last entry, all data is automatically transferred and balanced. It calculates aging and service charges, and prints invoices, statements, and checks. *(List Price: $749.95)*
Requires: 128K, two disk drives, (printer optional).

The Denver Software Company
14100 E. Jewell Ave. #15
Auroro, CO 80012
(303) 750-9980

Solomon Series Software

576 A series of general accounting programs. *Solomon I* provides general accounting facilities for small- to medium-size businesses. *Solomon II* adds a job-costing capability for service businesses such as law firms, job shops, service bureaus, and health card providers. *Solomon III* is designed for businesses thet meke, stock, end sell products such as manufacturers, import/export firms, distributors, dealers, and retailers. *(List Price: Solomon I $2,595, Solomon II $3,495, Solomon III not available)*
Requires: 64K, one floppy and one hard disk drive, CP/M-86, 132-column printer.

Computech Group Inc.
Moin Line Industriol Park
Lee Boulevord
Frozer, PA 19355
(215) 644-3344

HAI Microware HAI-BAS

577 A modular business system that provides a filekeeper and seven accounting functions: general ledgar, accounts receivable, accounts payable, inventory, invoice, bill of materials, and sales analysis. Each may be used separately or in combination to reduce data entry. Methods of operation are consistent for all functions. All reports, including sales analyses and corporate balance sheets, have a format determined by the user. Each posting to an accounting module generates a unique audit reference for control.

HAI Microware comes with its own operating system. *HAI-BAS*, a BASIC interpretar run-time module, is required for running the system and must be purchased separately. *(List Price: Each module $495, Sales Analysis $295, HAI-BAS $350)*
Requires: 64K, two disk drives.

Hollond Automotion USA Inc.
3400-D W. MocArthur Blvd.
Sonto Ano, CA 92704
(714) 641-2844
TWX: 910-596-1832

Accounting Plus

578 A fully integrated accounting package that runs under Digital Research's CP/M-86. Programs include an integrated order entry, inventory control, sales analysis, purchase order, accounts payable, accounts receivable, payroll, and general ledger. *(List Price: $3,525)*
Requires: 64K, 20MB hard disk drive, CP/M-86.

Professional Micro Systems
4000 MacArthur Blvd. #3000
Newport Beach, CA 92660
(714) 851-8655

Accountant's Client Write-up

579 A general ledger system suitable for accounting offices and bookkeeping firms offering client write-up and financial report preparation, as well as for larger firms requiring stand-alone financial reporting. The system includes general ledger detail, working trial balance, general ledger summary, journel printing, master chart of accounting listing, payroll processing, fixed asset reporting, current month's and comparative balance sheets and income statements, and budgeting with comparisons. *(List Price: Not available)*
Requires: 64K, 20MB hard disk drive, printer.

Professional Micro Systems
4000 MacArthur Blvd. #3000
Newport Beach, CA 92660
(714) 851-8655

Inventory

580 A menu-driven, on-hand, reorder, end usage reports program that includes videotaped and written instructions. *(List Price: $600)*
Requires: 64K, two disk drives, printer.

Fogle Computing Corporation
357 E. Blackstock Rd.
P.O. Box 5166
Spartanburg, SC 29304
(803) 574-4950

EZEntry

581 An on-screen order entry system for telephone or mail order sales that stores 500 orders per disk. It prints customer invoices, with automatic extension of up to 200 product codes. It can be used for wholesale, retail, pricing discounts, and taxes. *(List Price: $99.95)*
Requires: 64K, two disk drives, IBM 80 cps matrix printer.

Systemics, Inc.
3050 Spring St.
West Bloomfield, MI 48033
(313) 851-2504

HAL3000 Statistical Software

582 A program that includes regression analysis; correlation coefficient; mean, median, and mode; linear and curvilinear interpolation; chi square; and tau. *(List Price: $395)*
Requires: 48K, one disk drive.

Keller Software
1825 Westcliff Dr.
Newport Beach, CA 92660
(714) 975-4943

The Data Line

583 A program that keeps accounts and budgets and can interface directly with the manufacturer's word processing software (*The Word Wire*) to format printed output. *(List Price: $79.95)*
Requires: 64K, one disk drive, 80-column monitor.

Soft Spot Micro Systems
24 Dione Dr.
Collinsville, CT 06022
(203) 379-7047

Versaform

584 A forms processing system that enables nontechnical users to build an information system around existing forms. Data can be entered in transactions of up to 99 lines from such documents as purchase orders, invoices, ledger cards, or medical insurance claims. The user creates a data base that may be formatted for printing on the original paper form and can summarize all forms in the file. Running subtotals can be reported, and the user may edit data entries. It supports up to 572K. Memory above 128K can be logically assigned as a disk file. It supports function keys and multiple modes on a monitor. *(List Price: $495)*
Requires: 128K, one disk drive, 80-column monitor.

Applied Software Technology
14125 Capri Dr.
Los Gatos, CA 95030
(408) 554-0604

INV-X

585 Software features for inventory management including a built-in sort/merge package, a key access method with hashing algorithm, a report writer, and capacity for 2,200 records on a 5-inch disk or 28,000 for unlimited disk storage. Other features include an order report for checking inventory items, a performance report, and an end-of-year processor for calculating economical order quantity. *(List Price: $298; manual only, $25)*
Requires: 64K, 132-column printer.

Micro Architect Inc.
96 Dothon St.
Arlington MA 02174
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ACCOUNTING AND INVENTORY

Accounting Package

586 An integrated general ledger, accounts payable, accounts receivable, and payroll accounting package. Each program in the series may also be used separately. *(List Price: Each package $100; all four $350; manuals only, $20 each)*
Requires: 64K, one disk drive.

Software Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309, (614) 889-5083
CompuServe: 71535,1670

Accounts Receivable

587 A complete invoicing and monthly statement generating package by Peachtree Software that tracks current and old accounts. A complete record is maintained for each customer, and the current status of each account is instantly available. The program prints invoices, statements, and aging reports, and maintains sales-tax information and the accounting detail for posting to the Peachtree General Ledger. Prompts allow inexperienced operators to use the system with minimal instruction. *(List Price: $595, IBM Product Center prices)*
Requires: 64K, two disk drives, 80-column monitor, printer.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alaska, Hawaii

Payroll

588 Five modules for payroll, contractor, restaurant, farm, and piecework designed for novice users. The program processes complete employee payroll including printing checks and W-2 forms. It allows for automatic posting to the *Job Cost* and *General Ledger* programs by the same manufacturer. Users are able to maintain federal tax changes, FICA limits and percentage changes, FUTA limit changes, state unemployment limits, and state income tax changes. *(List Price: Each module $585)*
Requires: 64K, two disk drives, 80-column monitor, 132-column printer.

Computer Systems Design, Inc.
P.O. Box 735
Yakima, WA 98907
(509) 575-0320

Forecast Cash Flow

589 A program that forecasts cash flow using a short-term forecasting technique and indexes cash flows for a forecast period including seasonal pattern determination. It also forecasts inventory and production. *(List Price: $49 including documentation)*
Requires: 64K, two disk drives, *DOS* or *CP/M-86*.

Microsystems
7201 87th Ave. SE
Mercer Island, WA 98040
(206) 232-1513

Accounts Payable

590 A program that allows payment of invoices based on a pay date. The system can print checks and will update to the *Job Cost* and *General Ledger* programs by the manufacturer. Designed for novice users, it can handle a maximum of *300* vendors and *1,200* invoices. *(List Price: $485)*
Requires: 64K, two disk drives, 80-column monitor, *132*-column printer.

Computer Systems Design, Inc.
P.O. Box 735
Yakima, WA 98907
(509) 575-0320

Financial, Inventory, Cost Accounting

591 A business package that includes financial, inventory, and cost accounting programs. It is designed for businessmen with little or no background. *(List Price: Not available)*
Requires: Not available.

Simple Structure Systems, Inc.
7114 Hawthorn Ave.
Hollywood, CA 90467

Execuware Economic Order Quantity

592 An inventory cost-control software package that minimizes inventory costs while maintaining ideal stocking levels. *EOQ* offers a built-in probability theory so users can simulate variations in demand and decide on optimum inventory levels. It allows the user to perform "what-if" analyses on high-cost or large-volume items and analyzes vendor discounts and potential inventory problems. *(List Price: $174.95)*
Requires: 64K, one disk drive.

Aeronco, Inc.
Microcomputer Software Division
4530 Park Rd. #348
Charlotte, NC 28209
(704) 525-9881

Accounting Plus

593 A fully integrated, menu-driven accounting system that tracks, reports, and summarizes accounting transactions. The program was designed to provide financial information for small-business managers. *(List Price: Not available)*
Requires: 128K, one hard disk drive, Baby Blue.

Software Dimensions, Inc.
6371 Auburn Blvd.
Citrus Heights, CA 95610
(916) 722-8000

Accountant

594 A menu-driven accounting system for CPAs and small- to medium-size businesses, including general ledger, accounts receivable, accounts payable, and payroll. The program includes comprehensive manuals and date files for training and practice. *(List Price: $365)*
Requires: 64K, two floppy disk drives or hard disk drive, 132-column printer.

Insoft, Inc.
10175 SW Barbur Blvd. #202B
Portland, OR 97219
(503) 244-4181

Peter

595 A set of programs to maintain data and perform calculations to produce payroll checks, summary accounting information, and government reports. The program will store as many employee names as the disk storage equipment can hold. For each employee the name, address, salary, and other data for calculating earnings and deductions are stored along with year-to-date and quarter-to-date totals of each earning and deduction item.

Up to six earning and ten deduction items can be used for all employees, and each employee can use any or all of these. The earning and deduction items can be manually entered per employee or pay period or can be calculated on an hourly rate, a percentage of gross pay, or with a graduated tax table. Reports will accommodate the earning and deduction items actually used.

The program accrues expenses and deductions, and compiles the proper journal entries to post to the general ledger. If the manufacturer's general ledger system is used, entries can be automatically updated without the need for manual posting. *(List Price: $495 including program disk and instructions)*
Requires: 48K, two disk drives, parallel printer adapter, printer for 8½- by 11-inch paper.

Information Automotion Corporation
2900 Turtle Creek Plaza #500
Dallas, TX 75219
(214) 559-2710

April

596 Accounts payable systems designed for business people with little knowledge of computers, and secretaries or bookkeepers with no knowledge of computers and limited knowledge of accounting. Programs are operator-oriented with prompt messages to guide the operator through the program. No programming knowledge is required for installation.

Posting to general ledger is automatic when used in conjunction with the manufacturer's general ledger package. Programs in the system include *Initialize, Change General Information, System Menu, View Vendor,* and *Maintain Vendor File. (List Price: $395 including program disks and complete instructions; installation and training charges extra)*

Requires: 48K, two disk drives, parallel printer adapter, printer for 8½- by 11-inch paper.

Information Automation Corporation
2900 Turtle Creek Plaza #500
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Economic Order Quantity

597 An inventory system that provides businessmen with a tool to minimize costs. The program gives answers to "How much inventory should I order?" and "To what level should I allow my inventory to dwindle before placing an order?" The program calculates economic order quantity (EOQ) and order point.

The program uses sensitivity analysis and probability theory in calculating the order point. Sensitivity analysis affords users the opportunity to perform "what if" analysis and determine which variables cause EOQ and order point to vary significantly. *(List Price: $174.95)*

Requires: Printer recommended, (other requirements not available).

Executware
4530 Pork Rd. #348
Charlotte, NC 28209
(704) 525-9881

Versapayables

598 A menu-driven accounts payable system that helps users keep track of money owed. All summary reports, checks, and statements can be printed on tractor feed forms or plain paper. The program maintains records of current and aged payables, vendors, and due dates for payable transactions. *Versapayables* prints checks and detailed check registers automatically. The program interfaces with the company's other programs.*(List Price: $99.95)*

Requires: 48K, two disk drives, DOS or CP/M-86.

H&E Computronics Inc.
50 N. Pascock Rd.
Spring Valley, NY 10977
(800) 431-2818, (914) 425-1535

Inventory Program

599 A business program that creates an inventory file of up to 1,800 items (for single-sided diskettes) or 3,600 items (for double-sided diskettes). *(List Price: $95)*

Requires: 64K, two disk drives, printer.

Micro Research, Inc.
6938 S. Yukon Ct.
Littleton, CO 80123

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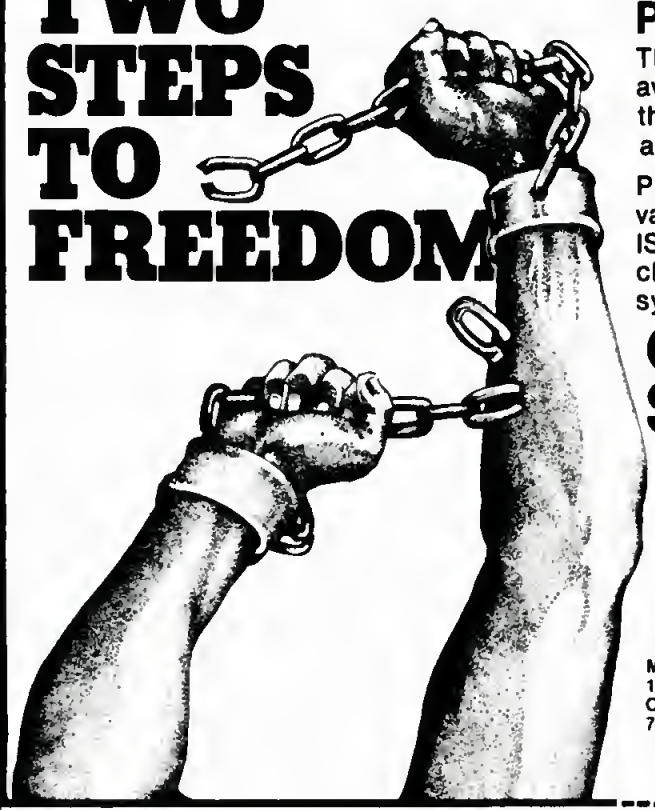

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ACCOUNTING AND INVENTORY

Osborne Accounting System

600 A general ledger, accounts payable and receivable, and a payroll program. *(List Price: $99 each)*

Requires: 32K, two disk drives, printer.

Mentor Computer Services
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601 Four engineering modules. *Civil Engineering* includes concrete and piping estimating, trench backfill, piping networks flow, and surveying closures. *Scheduling* contains CPM for estimating and construction, including start and end node listings for hundreds of activities. *Cost Engineering* records data using cost codes and provides detail and summary reports. *Electricol Engineering* includes 21 general purpose programs. Programs are customized to the user's specific applications. *(List Price: Scheduling, Electrical Engineering $495 each; Civil Engineering $595; Cost Engineering $695)*

Requires: 48K, one disk driva.

Keller Softwore
1825 Westcliff Dr.
Newport Beach, CA 92660
(714) 975-4943

Sydney Real Estate Analysis System

602 A fully interactive menu-driven system for real estate professionals. Its four main modules ara real estata investment analysis, contemporary financing, brokers' statements of adjustment, and proparty record kaeping. It also contains tax information to give after tax values in pro forma analysis. *(List Price: $1,895)*

Requires: 128K, two floppy disk drives or one hard disk drive, printer.

Sydney Development Corporotion
600-1385 W. 8th Ave.
Voncouver, B.C., Conodo V6H 3V9
(604) 734-8822
Telex: 04-54357

Police Communications Log System

603 A menu-driven, interactive program that allows police dispatchers to log and track incoming calls during a 24-hour period. A "Cars Out Summary Report" tracks police cars that have been dispatched but hava not signed back in. Daily and weekly reports are produced from tha 24-hour log. Two levels of password security prevent unauthorized use of the program.

Requires: 64K, two disk drives.

Microbase Softwore, Inc.
P.O. Box 4353
Indionopolis, IN 46240
(317) 877-4304

Insurance Systems Modules MIS 1-5

604 A series of fiva intagrated insurance modules designed for independent insuranca agants. *MIS-1* is the basis for all the other modules. It offers full marketing capabilities, integrated letter writing, and an unlimited cliant data base.

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Requires: 64K, two disk drives, 80-column monitor, 80-column printer.

Metomorphics Inc.
154 Montgomery Ave.
Bala Cynwyd, PA 19004
(800) 523-0206, (215) 688-9000

The Drapery Business System

605 A comprehensive system providing functions for the drapery business in the areas of inventory, purchasing, order entry, calculation of workroom requiremants, customer invoice, month-and profit and loss, and management reports. *(List Price: $5,000)*

Requires: 128K, two dual-sided floppy disk drives or one dual-sided floppy disk drive and one hard disk drive, printer.

Sydney Development Corporation
600-1385 W. 8th Ave.
Voncouver, B.C., Conodo V6H 3V9
(604) 734-8822
Telex: 04-54357

Chiropractic Record System

606 An application system that provides for patient record keeping, patient billing, claims processing, and practice management reporting. It is designed to minimize the chance of operator error and reduce office personnel training. The system is based on processing individual transactions.

Various report formats and/or statements may be selected at tha time of installation without major programming dalays. A complete audit trail protects financial records. *(List Price: $2,000 including source code)*

Requires: 64K, one floppy disk drive, one hard disk drive.

Johnson Associotes Softwore
P.O. Box 3069
Redding, CA 96049
(916) 221-0740

Threshold

607 A medical software packaga that does insurance filing including teleprocessing to Blue Cross/Blua Shield and Medicare. Unattanded statement processing, complete security system with audit trails, daily update of statistical information, comprehensive management reports, instantaneous retrieval of all information, on-line help information, and electronic mailbox and message system are also provided. *(List Price: $5,500)*

Requires: 128K, ona floppy disk driva, 15MB hard disk storage.

Physicions Proctice Monagement
1810 S. Lynhurst, Ste. Q
Indionopolis, IN 46241
(317) 248-0357

Lumber Dealers Record System

608 A program that provides complete inventory managament, accounts receivable, special estimata pricing, and management reporting. It is designed to minimize the chance of operator arror and reduca office personnal training.

The application system is based on processing individual transactions and is equally usable in tha front office or in the accounting offica. Various report formats and/or statements may be selected at the tima of installation without major programming delays. A complete audit trail protects financial records. *(List Price: $3,000 including source code)*

Requires: 64K, one floppy disk drive, one hard disk drive.

Johnson Associotes Softwore
P.O. Box 3069
Redding, CA 96049
(916) 221-0740

Monitor

609 A program that captures over 450 data items regarding open-heart and related surgaries for use in statistical analysis. Tha system provides on-line help information for every itam on every screen up to 50 screens, help information for each menu selection, electronic mailbox, user halp for parameter-drivan functions, and audit trails.

Other features include continuity of program operation, Internal program standardization, user enhancement with complete standardization, and compatibility with other generated modules and packages. A full year of enhancements is supplied at no extra cost. Customizing is available on site if necessary. *(List Price: $3,500)*

Requires: 128K, one floppy disk drive, one hard disk drive, 132-column printer, COBOL run-time libraries.

Physicions Practice Monagement
1810 S. Lynhurst, Ste. Q
Indionopolis, IN 46241
(317) 248-0357

Lease Classification Package

610 A program that classifies leases for financial accounting purposes according to F.A.S.B. standard critaria. It prints classification documents for workpaper files. *(List Price: $55)*

Requires: 64K, two disk drives, Epson or IBM printer.

Professionol Softwore Concepts
P.O. Box 483
Hazelwood, MO 63042

Window Ads

611 A software package for creating window ads on standard computer peper. The program can be used by both experianced and inexperienced computer users. *(List Price: $47.50; manuol only, $6.95)*

Requires: Printer, (othar requirements not available).

ATC Software
R2 Box 448
Estill Springs, TN 37330
(205) 837-4718

Gasoline Energy Distribution System

612 Software that includes a gasoline distribution plan, multiple fuel products, location inventory, tires, batteries, and accessories. It provides sales analysis by product and location, eccounts receivable, and invoicing. Optional features include payroll, general ledger, and accounts payable. *(List Price: $1,000–$5,000)*

Requires: 64K, 5MB hard disk drive.

Comsen Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
(717) 737-2049

Electrical Engineering Pac, Civil Engineering Pac

613 Electricol Engineering Poc solves common DC and AC circuit problems. Civil Engineering Poc is a program series for solving common surveying problems. *(List Price:* Electrical Engineering Pac *$29.95,* Civil Engineering *Pac $79.95)*

Requires: 64K, one disk drive.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

Fuel Oil Energy Distribution System

614 A program that includes degree day accounting zones, number of days, and will call. TBA inventory tracks all liquid fuel products as well as tires, batteries, and accessories. Additional features include accounts receivable, credit limits, financa charges, burner service contracts, invoicing, and dunning notices. Optional systems include accounts payable, general ledger, and payroll. *(List Price: $1,000–$5,000)*

Requires: 64K, 5MB hard disk drive.

Comsen Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
(717) 737-2049

MedAccount

615 A medical accounts receivable package designed for a single medical office or a number of offices sharing a common data base computer. It is available for both single and multiuser systems. A report-generating feature includes daily activity reports by doctor, patient lists, and monthly and quarterly patient activity reports. Users can add, scan, or update patient data on line using tha patient's name, number, or social security number. The program handles as many offices as needed, with an unlimited number of doctors in each office.

MedAccount interfaces to SPI's LogiQuest and comes in two versions. SPI witl include the turnkey UCSD p-System operating system if required. Included in the system are a text editor, file manager, and disk formatting utility. *(List Price: $2,500; monuol only, $50)*

Requires: 64K, two disk drives, UCSD p-System.

Softwore Products Internotionol
10343 Roselle St., Ste. A
Son Diego, CA 92121
(714) 450-1526

SMAC Processing Computer

616 A data processing link that intarfaces between Technicon Corp.'s SMAC clinical laboratory blood analyzer and a data processing/reporting systam. Results ere collected at the rate of one result per second. It performs real-time quality control functions on the data and records results on disk. Lab technicians can edit results via a group of search and edit commands. Results and changes are logged on an Epson or equivalent printer as an audit trail.

The disk can be either taken to or transmitted to another data processing system for reporting onca tha entire batch of samples is approved. *(List Price: Cabling and interfoce $650, softwore license $7,500, optional instollotion $400/day plus expenses)*

Requires: 128K, two disk drives, asynchronous I/O board, Epson or equivalent printer, cabling, printer interfaca.

Persoft, Inc.
2186 U.S. Highway 51
Stoughton, WI 53589
(608) 233-1000

Point Of Sale

617 A program designed for auto parts, hardware, equipment, and other parts-number oriented industries. The program keeps track of Inventories, prints invoices and management reports, and presents cumulative sales totals and gross profits. It is color- and menu-driven and a series of add, deleta, and change commands will omit or restore data from parts lists. The program keeps track of monthly, quartarly, and yaarly unit saies. Disk capacity limitation is 2,000 parts per disk. Average response time is less than 2 seconds. *(List Price: $295)*

Requires: 64K, two disk drives, printer.

Tom Leonord or *Ali R. Dobiri*
P.O. Box 308
Montgomery, WV 25136
(304) 442-5537

The 25th Hour, 25:02—Magazine/Book Reference

618 Software that organizes journals, magazines, newspapers, and books, cross-referencing the information according to author, primary and secondary topic, publication data, and key word. Each reference lists the publication, author, and topic/subtopic, and catalogs tha issue, date, and page or location of each article. The program is manu-driven and uses single-command function keys. It handles up to 500 entries per disk drive and up to 1,400 entries on two disk drives. *(List Price: $69)*

Requires: 64K, ona disk drive, 80-column monitor, 80-column printer.

Softrend Inc.
P.O. Box 1462
Chorlottesville, VA 22902
(804) 293-5344

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This device uses standard 35mm slide film that can be processed at any local photo lab or store. Its sleek, modern design is color coordinated with the IBM System. The unit is also compatible with a variety of other personal computers.

VP-01-35 $2,495.00 OEM and Dealer pricing available. Prices include 35mm film system with autowind. TTL RGB interface (IBM Personal Computer). All prices FOB Dallas, Texas. Prices subject to change without notice.

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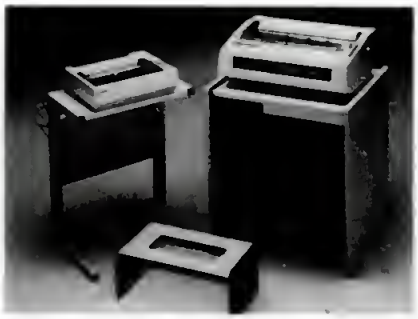
Computer-Mate distributes Electrohome monitors (Model ECM 1302-2 shown). *Call or return order form for information.*



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Designed exclusively for your IBM Printer ... available in desk top or free standing models. Optional basket available. Sturdy construction with attractive gray color and black accents to match IBM System.

IBM Models

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PS-01-IBM $129.00
18" wide x 12" deep x 26½" high

PS-02-IBM $215.00
24" wide x 20" deep x 25½" high

PS-01-B-IBM Printer Stand Basket $20.00

CABLES BY COMPUTER-MATE (Not Shown)

Have greater freedom to fit your configuration needs with these extension cables, exclusively designed for the IBM Personal Computer.

Extension Cables

Keyboard Extension Cable:
3-foot, 5-pin din cable connects keyboard to CPU

K-01-IBM $35.00 each

Monochrome Monitor Extension Two Cable Set:
3-foot, 9-pin monitor extension cable
3-foot power extension cable
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MMP-02-IBM $55.00 per set

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JOB & INDUSTRY SPECIFIC

Jobtrax

619 A program designed for engineers, architects, and contractors that provides the ability to estimate initial project costs and resource requirements. It also includes the ability to monitor budget and schedule status during the project. *(List Price: $250)*
Requires: 96K, one disk drive, color/graphics adapter, parallel printer board, printer.

Omicron Software
Engineering-Science
57 Executive Park South #590
Atlanta, GA 30329
(404) 325-0770

Cost Estimating

620 Software for contractors, engineers, and architects. It provides a complete cost braakdown analysis with unit cost for materials, labor, and totals. *(List Price: $300)*
Requires: 64K, one disk driva.

Richard Caldwell
2063 43rd Ave.
San Francisco, CA 94116
(415) 661-7840

Dentist Invoice Generator for Public Aid

621 Software that prepares invoices for public aid for dentists' offices in Illinois. The program is menu-driven with a user manual. It stores 275 patients' accounts on a single-sided disk drive and 550 on a double-sided drive. Customizing is available at additional cost. *(List Price: $49)*
Requires: 48K, one disk drive, printer.

Sapana Micra Software
P.O. Box 748
Quincy, IL 62301
(217) 224-4337

Branchbanker

622 A menu-structured tool for financial institutions. The package currently consists of Master and Individual Retirement Account (IRA) modules. The company plans to develop an extensive set of programs that uses the Master Module as a prerequisite. *(List Price: Master Module and one accessory $595)*
Requires: 64K, printer, (other requirements not available).

Ampersand Corporation
128 S. George St.
York, PA 17405
(717) 845-5602

Real Estate Analysis System

623 A software package that allows real estate professionals, accountants, and attorneys to model commercial or residential real estate projects, perform "what-if" analyses, and evaluate partnership and joint venture arrangements. It generates up to six reports, including projections of operating income, tax implications, and cash flow analyses. Reports are in presentation quality format. *(List Price: $200)*
Requires: 64K, two disk drives.

Decision Support Systems
3234 Prospect St., N.W.
Washington, DC 20007
(202) 342-8172

Loan Analyzer

624 A software program for real estate professionals that calculates amortization schedules for complex real estate loans. Complete amortization schedules may be printed in presentation quality format. *(List Price: $95)*
Requires: 64K, one disk drive.

Decision Support Systems
3234 Prospect St., N.W.
Woshington, DC 20007
(202) 342-8172

Real Estate Consultant

625 A software package that analyzes real estate transactions. Input questionnaires are provided. The program includes prompting and automatic error correction and computes amortization. It can be updated for the latest tax laws and answers investors' questions through extensive "what if" analyses. Both system functions and all input/output data are explained in a user manual that can function as a real estate investment tutorial. *(List Price: $195)*
Requires: 64K, ona disk drive, 80-column monitor, printer.

CSI Consultant System Inc.
3887 State St. #111
Santa Barbora, CA 93105
(805) 964-7047

Insurance Data Base System

626 A package designed for independent insurance agents. It gathers information from insurance companies the agents represent and makes the information available on a single data base. Using standard insuranca forms, agents input information on an account and compara the results offered by several companies. The program also creates graphs of the comparisons. *(List Price: $1,500)*
Requires: 64K, one disk drive.

Mirror Images Softwore
1223 Peoples Ave.
Troy, NY 12180
(518) 274-2335

Mister Landlord

627 A complete system designed for managers of apartment buildings. The master file contains information on each apartment and each tenant. The manager can determine the status of apartments, keep a general journal of all expenses, and review a monthly profit and loss statement. The system prints rent rolls; monthly rent bills; form letters such as leases, lease renewals and terminations, and notices of nonpayment; and user-designed form letters. *(List Price: $395)*
Requires: 48K, one disk drive, printer.

User-Friendly Software Inc.
P.O. Box 1192
Melville, NY 11747

L.P. Gas Distributors System

628 Software that provides route accounting, sales analysis, meter billing, and customer accounts receivable billing and control. It is designed to minimize the chance of operator error and reduce office personnel training. The application system is based on the processing of individual transactions. Various report formats and/or statements may be selected at the time of installation without major programming delays. A complete audit trail protects financial records. *(List Price: $3,000 including source code)*
Requires: 64K, one floppy disk drive, one hard disk drive.

Johnson Associates Softwore
P.O. Box 3069
Redding, CA 96049
(916) 221-0740

Software Aids for Piping Industry

629 A group of tan programs for tha piping industry. The programs include a Plumbing Estimator for most plumbing taka-offs, a Maximum Piping Working Pressure for determining flexibility in L or U pipe bends, and a Pipe Nozzle Reinforcer to determine whether a branch outlet requires a reinforcement pad.

Other programs include pipe cutting list take-off for prefabrication, pipe wall thicknesses, piping expansion analysis, haating estimator, cutback 90° elbows, steel beam sizing for midspan loading, and uniform span loading. *(List Price: Not available)*
Requires: 64K, one disk drive.

Pipe Prefabricotion
P.O. Box 1376, Station B
Downsview, Ontario
Canada, M3H 5V6

JOB & INDUSTRY SPECIFIC

Church Membership and Contributions

630 A menu-driven program that maintains a list of all church members, church involvements, family reletionships, commitments to four categories of church support, and weekly contributione. Totals for all categories and eech member's contributions are eveilable at all times. Tha ledger statement printout is availeble on demand for tax purposes. Yearly records for approximately 100 members ere on each disk. *(List Price: $699)*

Requires: 64K, two disk drives, printer.

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

MicroCAD

631 An interective, computer-aided design system that enables the user to construct end visualize objects three-dimensionally and to interpret drawing files in e variety of ways. Users can draw directly on screen, produce instant perspectives, plot on the printar, and edit images. Drawing files can be sent via telephone to service bureaus or drafting departments for further plotting. The system is especially useful for civil engineers, architects, or other design-oriented professionels who need to visuelize three-dimensionel creations. It supports monochrome or color display. *(List Price: $400)*

Requires: 64K, one disk drive.

Computer Aided Design
764 24th Ave.
San Francisco, CA 94121
(415) 387-0263

Physician's Assistant

632 A system that provides medical office business functions such as billing, receivables, encounter recording, forms, scheduling, and monthly statements. It also provides the capability for complete medical histories, financial end medical reports, security, backup, and remote access of medical records. Updates are supplied and e service contract is evaileble. *(List Price: Complete pockage $18,995; softwore only, $6,495)*

Requires: 64K, one floppy disk driva, ona hard disk drive.

Optimal Computing Solutions
P.O. Box 585
Bound Brook, NJ 08805
(201) 752-5830

Medical Record System

633 A system designed to minimize the chence of operator error and reduca office personnel training. The program provides complete patient record keeping, patient billing, cleims processing, end practica management reporting.

The application system is based on processing individual transactions. Various report formats and/or statemants may be selected at the time of installation without major programming delays. A complete eudit trail protects financiel records. *(List Price: $2,000 including source code)*

Requires: 64K, one floppy disk drive, one herd disk drive.

Johnson Associotes Software
P.O. Box 3069
Redding, CA 96049
(916) 221-0740

Star System 7

634 A property menegement softwara package customized to handla cash disbursements and rent receipts for epartments, condominiums, and small commercial developments. It produces a variety of reports including tenent rolls, vendor lists, income statemants, balance sheets, and budget analyses. *(List Price: $950)*

Requires: 48K, two disk drives, 80-column monitor, 132-column printer.

Star Computer Systems
18051 Crenshaw Blvd.
Torrance, CA 90504
(213) 538-2511

Oil Operator's Record

635 A program that kaeps track of oil well expenses and income. Each disk maintains e separate accounting for one to 200 properties. A complete printout of expenses and income is available with totals end grand totals for each category. *(List Price: $999)*

Requires: 64K, two disk drives, printer.

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

L.P. Gas Energy Distribution System

636 A program that provides for L.P. gas distribution by degree, day, zones, number of deys, end will call. TBA inventory tracks all liquid products as well as tires, batteries, end eccessories. Accounts receivable, invoicing, and dunning notices are included. *(List Price: $5,000)*

Requires: 64K, 5MB hard disk storage.

Comsen Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
(717) 737-2049

PMS-II

637 A project management system ai critical path network anelyzer fo construction managemant, engineering and plenning, research and development, high-tech manufacturers, govarnment subcontractors, and educators. Baby Blue ai CP/M-86 versions are used for the IBM PC

The program meets all government proje management reporting requirements. It computes critical paths and floats, with earl and lete start and finish for each activity, fo over 1,000 activities per network. Report formets include GANTT charts and activity diegrams, ell subject to the user'e dafinition end selection. *PMS-II* interfaces with *RMS-*e resource management system. *(List Price:$1,295)*

Requires: 64K, 1MB disk storage, CBASIC Baby Blue version, CBASIC-86 for CP/M-8 version.

AHA, Inc.
1475 Rodriguez St.
Sonto Cruz, CA 95062
(408) 475-8705, 475-7247

S3E, Steady State Systems Engineering

638 An interactive systems analysis program designec for power plant e chemicel process thermodynamic analysis. consists of stand-alone modules linked by data base of system and component variebl Modules include *Mothpak* for curve fittin root finding, optimization, and matrix analysis; *Thermopok* for calculating properties of up to 14 species; *S3EPAK* includes commonly required systems end L modules. Other modules are *Heat Exchongers, Fluid Components, Reoctor Components,* end *PSI Fuel Cell Libraries. (List Price:* Mathpak *$50,* Thermopak *$75,* S3EPAK *$50,* Heat Exchangers *$100,* Fluid Components *$50,* Reactor Components *$15*

Requires: 64K, one disk drive.

Physical Sciences Inc.
30 Commerce Way
Woburn, MA 01801
(617) 475-9030

Travel Agency System

639 A complete business system for travel agencies that keeps track sales tor airline and train tickets. It produces weekly report similar to A.T.C. reports and tracks any pre-pays made for customers. Ar eccounts receivable report is available on demend. *(List Price: $980)*

Requires: 64K, printer, two disk drives.

Solution Softwore Systems
3930 Whispering Trails
Hoffman Estates, IL 60195
(312) 893-5111

Aptmnt, Offer

640 Two programs for the real estate industry. Aptmnt (apertment building analysis) calculates the profit or loss to a buyer after purchasing property on the seller's price and terms. Users can also compute price and terms on a trial and arror basis. They can specify profit and terms to obtain a required price and calculate all income and expense increases during the first 5-year period of ownership after buying at a particular price. By specifying tha intarest rate, users can obtain what the property should sell for after 5 years. The 5-year annual profit on the original investment in a profit-loss statement is also obtainable. A "what-if" may be queried on any parameter.

Offer computes how much money an offer would yield for a seller during the 5 years after the sale of property. The program calculates as many as three simultaneous offers on the same property. By using both programs, users can optimize an investment for buyers and sellers simultaneously. Both programs are on one disk without DOS. *(List Price: $400)*

Requires: 64K, one disk drive.

Normon Neinchel, *Realtor*
1777 Sorotogo Ave. #208
Son Jose, CA 95129
(408) 257-4411

Utility Billing System

641 A menu-driven system for processing water, sewage, and sanitation of small utilities. It handles up to 750 customers on a singla-sided diskette or 1,550 customers on a dual-sided drive. Up to 15 dlffarent rate classes and/or cycle rates are supported on the same file. Rates and options are user-defined. *(List Price: $250, documentation/information packet $25)*

Requires: 64K, two disk drives.

Mirocle Computing
313 Clayton Ct.
Lawrence, KS 66044
(913) 843-5863

Quikcalc Real Estate Investor

642 A financial analysis program for evaluating income properties and individual residences. Complax financing alternatives can be explored, including conventional mortgages, variabla rate mortgages, full balloon payments, and interest-only loans. All analyses are summarized into an inclusive internal rate of return.

The program is designed for individual home buyers, realtors, and investors. A comprehensive, fully illustrated manual is included. *(List Price: $129.95)*

Requires: VisiColc, (other requirements not available).

Simple Soft, Inc.
480 Eagle Dr. #101
Elk Grove, IL 60007
(312) 364-0752

Trucking System, Gateway

643 *Trucking System* provides for freight billing, automatic rating, shipper sales analysis, and driver settlements. It includes payroll (owner operated or company driver), an *ATA* maintenance system, trip reporting, mileage, fuel, and accounts receivable. *Goteway* is a menu generator for programmers. *(List Price: Trucking System $1,000–$9,000, Gateway $99.95)*

Requires: 64K, 5MB hard disk storage for *Trucking System*; 64K, two disk drives for *Goteway*.

Comsen Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
(717) 737-2049

Church Accounts

644 An adaptation of a spreadsheet for church accounting purposes. The program keeps track of expenditures and provides a printed record for budgating and auditing purposes. *(List Price: $299)*

Requlres: 64K, two disk drives, printer.

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

Custom Computer Systems

645 Customized software and training for churches, professionals, and schools. Among tha packages available are mailing llst, church membership and contributions, church accounts, oil operator's record, stockplot, and gradebook. *(List Price: Not avoilable)*

Requires: Not available.

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

SPREADSHEETS

Fast Figure

646 This business program features a spreadsheet with flexible printing and file sharing. Includes depreciation and **IRR** functions, with tex and business templates elso available. Designed primarily for business planning and "what if" analyses. *(List Price: $150)*

Requires: 64K, two disk drives.

Hourgloss Systems
P.O. Box 312
Glen Ellyn, IL 60137
(312) 690-1855

VisiCalc

647 A multipurpose forecasting and planning software package for accountants, analysts, and business planners. Users creata and manipulate an electronic worksheet of up to 63 columns and 254 rows. All values or formulas in this grid may be modified and *VisiColc* automatically recalculates the antire worksheet using the new values. The worksheet's intersecting columns and rows define up to thousands of entry positions and allow a myriad of different "what if" situations and possibla calculations. Cursor control keys permit scrolling in all four directions, and the screen may be divided into two windows to view diffarent sections of the worksheet at once. Applications include budgat planning, sales and cash flow projections, and market analyses.

VisiColc is also distributed by VisiCorp as one program in an integrated "VisiSeries." *(List Price: VisiCalc by VisiCorp $250, VisiCalc by IBM $200)*

Requires: 64K, one disk drive, 40- or 80-column monitor, (printer optional).

VisiCorp
2895 Zanker Rd.
Son Jose, CA 95134
(408) 946-9000

The PC Spreadsheet Report

648 An independent comparative analysis of spreadsheet simulation software for the PC. The report discusses the spraadshaat concapt and examines features such as power and performance, ease of use, functions and programmability, editing and report formatting, consolidation of models, graphics and utilitias, and integration with other software.

Programs reviewed include *VisiCalc, SuperColc, MultiPlon, CalcStor, MBA, LogiColc, MasterPlonner, PlannerCalc,* and other financial modeling tools. *(List Price: Not avoilable)*

Requires: Not available.

John U. Zussmon Associotes
P.O. Box 7507
Menlo Pork, CA 94025
(415) 854-6395

PlannerCalc

649 A spreadsheet plannar written in English syntax. Procedural steps are antered in English with conventional mathamatical logic. Individual comments are included along with line and column commands. The program has extensive help screens and is upgradeable, with 128 columns and 512 lines maximum. *(List Price: $50)*

Requires: 128K, two disk drives, DOS or CP/M-86.

Comshore Torget Softwore
1935 Cliff Volley Way
Atlanto, GA 30329
(404) 634-9535

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SPREADSHEETS

Scratchpad

650 A spreadsheet program with unlimited screen splitting, unlimited title locking, If/Than functions, features that consolidate up to four different spreadsheets at a time, and a merge feature. *(List Price: $295; monuol only, $15)*

Requires: 48K, one disk drive, CP/M-66 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Chompoign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

SuperCalc

651 An electronic spreadsheet designed for business people with no programming background. By changing one variable, business assumptions and long-range forecasts can be generated. Users with color monitors may display negative values in red and formulas in yellow. 256K users will be abla to fill all 16,000 cells of the workshaat with 5-digit numbers—enough space to allow 10-year projections by month. SuperCalc can be purchased alone or with an optional 192K memory board by Vista Computer Company. *(List Price: $295 including disk ond monuol, $795 including 192K board)*

Requires: 46K, one disk drive (two recommended), (printer optional).

Sorcim Corporation
405 Aldo Ave.
Sonto Clora, CA 95050
(408) 727-7634
Telex: 910-338-003

MicroPlan

652 Financial modeling, "what-if" analysis, and financial reports generated on the family of MicroPlan products. The MicroPlan spreadsheet, a menu-driven electronic worksheet for business applications, is the first in a proposed line of MicroPlan products. Applications include depreciation calculations, loan analysis, internal rates of return, tax computation, balance forward operations, and rolling forecasts.

A separate consolidation module handles three kinds of multiple table consolidations and automatically analyzes variances. Menus include their own built-in commands and displays, table formatting, data entry, math computation, financial computation, and report generation. *(List Price: MicroPlon $495, Consolidotion Module $295)*

Requires: CP/M-86, BASIC-86.

Chong Laborotories, Inc.
10228 Stelling Rd.
Cupertino, CA 95014
(408) 725-8088

Easycalc

653 A calculating tool that can be used to compute budgets and records, project investment returns, and figure taxes. It provides the capabilities of a two-dimensional "what if" calculator program, including formulas, labels, and variabla column widths, and will print to either a lina printer or a disk file. Written in C language, the program comes with IRS Form 1040 and other tax templates. *(List Price: $124.95)*

Requires: 64K, one disk drive, printer.

Norell Doto Systems Corp.
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

The Thinker

654 A spreadsheet program that allows users to answar "what-if" questions. Users can creata numaric relationships with 16 different mathematical functions including row and column totals. Changing one value will cause all related values to be automatically recalculated. *(List Price: $49.95)*

Requires: 46K, one disk drive, 80-column monitor.

TexoSoft
1028 Modison Ave.
Dallas, TX 75208
(214) 941-8475, 495-5052

Visualize

655 A menu-driven program that is a documentation aid for tha VisiCalc package. It allows users to produce permanent hard-copy documentation of all VisiCalc templates. The program produces three reports: The Layout Report allows users to print each cell in the spreadsheet and show the type of process in that cell; tha Calculation Report allows users to sort spreadsheet calculations by rows; and the Anomalies Report lists unnecessary or redundant format entries in the spreadsheet program.

Three templates are provided with the package: Check Register, Balance Sheet and Operating Statamant, and Cash Flow. Visuolize can run on a monochroma or color/graphics adapter. *(List Price: $100)*

Requires: 64K, one disk drive, (printer optional).

Norell Dato Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

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256K Non Expandable Model	$725.00
64K Expandable to 256K	$495.00 each

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3. Asynchronous communicati port with RS-232 and curre 100P interfaces

Electronic Spreadsheet

656 A spreadsheet program that allows mathematical calculations to be done in three dimensions, displaying the relationships between rows and columns. It uses three descriptive files, one for each dimension, and permits users to look at one plane at a time. Users can print out final reports with 6-line column headings and full row descriptions, and intermediate text may be placed anywhere in the final report. The program has the ability to handle over 1 million numbers and is written in APC BASIC. *(List Price: Not available)*

Requires: 64K, two disk drives, APCBASIC.

American Planning Corporation
4600 Duke St., # 423
Alexandria, VA 22304
(703) 751-2574

LoadCalc

657 A program that converts any text file into a "visi" data file (DIF file). Text files can be captured with communication programs such as *VisiTerm* or *R/Net* and loaded into *VisiTrend/Plot* or *VisiCalc*. Data sources users might have are time-sharing systems, other personal computers, and data from software programs that do not produce DIF files but can save data to disk as text files. *LoadCalc* allows selective conversion of the data.

Any text file can be converted into a DIF file. The program uses data from many sources with Visiseries programs. The screen menu looks like a *VisiCalc* screen with similar commands. Fractions are interpreted and converted to decimals. Edit and select data for conversion by row and column. Each field is analyzed and saved as either Label or Value in a DIF file. No programming is required. *(List Price: $95)*

Requires: 64K, two disk drives.

Cypher
121 Second St.
San Francisco, CA 94105
(415) 974-5297

VisiCalc Real Estate Templates

658 Programs for office building planning, participating mortgage, hotel planning, and lease aging. Included are inflation adjustments, NPV, after tax analysis, and residual value calculation. *(List Price: Not available)*

Requires: Not available.

Maplewood Software Co.
28 Lancaster Ave.
Maplewood, NJ 07040

VisiCalc Real Estate Templates

659 A menu-driven system designed for real estate developers, brokers, accountants, attorneys, and financial planners. Menu selections appear on every screen, prompting users to load new templates on top of the one currently in memory. This overlay technique results in automatic screen formatting and presentation of new menu selections.

Both volumes are contained on 5¼-inch disks. Volume I contains Internal Rate of Return, A.C.R.S. depreciation, straight-line depreciation, declining balance depreciation, sum-of-the-year's digits depreciation, amortization system, mortgage loan analysis, and personal financial statement. Volume II contains income property investment analysis. *(List Price: $99.95 including user manual and reference text)*

Requires: 64K, IBM disk drive (either single- or double-density), Personal Software's *VisiCalc* disk, set of blank disks, (printer recommended).

Sofstar, Inc.
13935 U.S. 1, Juno Square
Juno Beach, FL 33408
(305) 627-5511

MergeCalc

660 A spreadsheet that extends the usefulness of *VisiCalc* by allowing users to add segments of a total business into a consolidated model. It enables users to perform all types of complex analyses such as variance analysis, percentage change reports, time change reports, share of market analysis, incremental sales, or investment analysis. Users can add monthly reports to get quarterly totals and apply seasonal adjustment percentages.

The program allows users to carry out addition, subtraction, multiplication, division, and exponentiation for up to 15 *VisiCalc* models at a time. It can perform any series of operations users can describe, using an equation with up to 10 levels of brackets. Users can also do the same operations on DIF files.

It is menu-driven with on-screen prompts, and individual rows and columns as well as individual cells can be exempted from calculations. All labels and logic are preserved, so the result is a working *VisiCalc* model. The program is not memory dependent, so users can perform operations that are impossible with *VisiCalc*. *(List Price: $125)*

Requires: 64K, one disk drive, *VisiCalc*, (printer recommended).

Cypher
121 Second St.
San Francisco, CA 94105
(415) 974-5297

B&L Spreadsheet Program

661 A spreadsheet program the size of which is limited only by memory capabilities. The program also has special table lookup features. *(List Price: $99.95)*

Requires: 64K, one disk drive.

B&L Computer Consultants
226 S. Cole, Dept. P-2
Boise, ID 83709
(208) 377-8088

DATA MANAGEMENT

Record Management System

662 A package of five machine-language programs that can be used to handle data input, editing, validation, on-line retrieval, and printed reports. Custom-designed data manipulation can be filled in by the user's BASIC programs. Features include a user-defined record format, optional two-level record hierarchy, ASCII text-formatted files, and direct access by key field. The program will handle up to 65,000 records and has built-in sort and merge capabilities. *(List Price: Single CPU $395, License Source Code $950)*

Requires: 48K, one disk drive.

Washington Computer Services
3028 Silvern Ln.
Bellingham, WA 98226
(206) 734-8248

Forms Designer, Forms Editor, Data Entry

663 A tool designed for Pascal programmers to interactively lay out a form on a screen. A form can be saved onto a DOS file and later accessed by a set of run-time subroutines. Data Entry is designed for use without programming effort. Users lay out a form by using the Forms Editor and Data Entry to display the form and input data to a disk file based on the form's layout. *(List Price: Forms Designer, Forms Editor, run-time subroutine, and Data Entry $175; Forms Editor and Data Entry $75; demo and documentation $25)*

Requires: 128K, one disk drive (two recommended).

Business Information Technologies
P.O. Box 619
Milpitas, CA 95035
(408) 262-1054

DATA MANAGEMENT

Easyfile

664 A program that has comprehensive search functions allowing users to search any word/phrase combination across all categories and display/print the results. Possible uses include storing bibliographies, receipts, recipes, or system requirements. *(List Price: $35; documentotion $3)*
Requires: 48K, one disk driva.

Mirocle Computing
313 Cloyton Ct.
Lawrence, KS 66044
(913) 843-5863

FileAide

665 A program that enables users to input standard PC-BASIC sequential or random disk fiies. Users can also perform individual record edits or full-file global editing, extract data to creata naw files, design screan displays, and generate custom reports. Conditional expressions may be entered to fine tune and selectively perform all edits and displays or to control reporting. A special create-file option enables test data or empty files to be generated. *(List Price: $47)*
Requires: 48K, one disk drive, printer.

New Venture Systems
P.O. Box 2141
Chesapeoke, VA 23320
(804) 482-1889

PCFile

666 A filing program that enables users to store and retrieve a variety of textual information such as bibliographic references, facts, anecdotes, and trivia. Text storage and retrieval is accomplished through key words or identification numbers. *(List Price: $29.95)*
Requires: 64K, one disk drive, 80-column monitor.

TexoSoft
1028 N. Modison Ave.
Dallos, TX 75208
(214) 941-8475, 495-5052

Order Entry System

667 A system that automatically locates and displays customar and itam information, calculates taxes and discounts, and redisplays and reprints previously entered orders. All processing is done with menus and fill-in-the-blank screens. *(List Price: $325)*
Requires: 64K (128K recommended), one disk drive.

Distributed Softwore Systems
P.O. Box 1301
Northbrook, IL 60062
(312) 634-1511

The Data Reporter

668 A data base management system that features machine language searches and sorts, soundex searches, calculated fields, batch commands, password protection, user-specified fields, unlimited record lengths, and several printing options. *(List Price: $250)*
Requires: 64K, one disk drive, printer.

Synergistic Softwore
830 N. Riverside Dr.
Renton, WA 98055
(206) 226-3216

Comprehensive Information Management System (CIMS)

669 A menu-driven, relational DBMS that simplifies information or data processing for accounting functions, inventory control, performanca reports, and other applications. Features include sorting, modifying, and updating information; automatic calculating; totaling; aggregate and relational functions; and extensive dynamic capabilities. *(List Price: $475 including user monuol)*
Requires: 64K, two disk drives, (printer optionai).

Business Dato Systems
608 Fox Volley Dr.
Longwood, FL 32750
(305) 862-9695

List Manager

670 A program that permits the entry and maintenance of a complete name-and-address data base to provide for printing maiiing iabels, information lists, and miscelianaous reports. Output can be designed for continuous printed forms such as personnel lists, internal telephone directories, mailing lists, customer files, and sales contacts. Either monochrome or color display can be used. *(List Price: $47)*
Requires: 48K, one disk drive, printar.

New Venture Systems
P.O. Box 2141
Chesapeoke, VA 23320
(804) 482-1889

Comsort

671 Software that allows users to sort and designate up to ten sort fields. Designated fields can be chosen from anywhere in the file with no restrictions on ordering. Users can build a file containing the sorted records or only record numbers. A user can also combine ascending or descending ordaring of fields and save sort parameters for futura usa. It can also be used as a subroutine. *(List Price: $99.95)*
Requires: 64K, two disk drives.

Comsen Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
(717) 737-2049

Tiger Database

672 A program that ellows users to collect information; search the data base; and updata, select, and sort data for reports. Written in assembly language, the program includes manu displays, fill-in-tha-blanks design, and a demonstration disk containing over 100 sample data bases for nearly every profession.

Features inciude optional data entry editing, password end scrambla code security, calculated fields and user-dafined defaults, comprehensive searching (range, wild card, prefix and suffix, not, sounds-like), and flexible reporting. *(List Price: $200)*
Requires: 64K, two disk drives.

Tiger Softwore Inc.
3857 Birch St. #600
Newport Beach, CA 92660
(714) 552-8650

Personal Pearl

673 A data base management program designed for nontechnical users that combines forms, report, and program ganeration. Users can create a custom-designed library of programs with the package. It can be used with both *SuperCalc* from Sorcim and *WordStor* from MicroPro in the current Z-80, 8080, and 8086 environment. *(List Price: $295)*
Requires: Printer recommended, (other requirements not availabla).

Relotionol Systems Internotional Corporation
5002 Commerciol St. S.E.
Solem, OR 97306
(503) 363-8929, 370-8653

Info-SORT

674 A program designed to be used as a stand-alone utility or to be interfaced with existing application programs. It uses assembly ianguaga for the sort routine and BASIC for user interface. It requires no knowledge of BASIC or machine language interfacing and sorts up to nine keys—independently, ascending, and descending. It includes or omits records with up to eight independent selections. Comparisons allow "less than," "greater than," and "equal to." Sort parameters can be easily specified and saved on disk for future use. The output fila may be a sorted copy of the input file, a file of tha ralative record numbers of the sorted input file, or an index file containing the sorted keys and the relative record numbers. *Info-SORT* can interface with the manufacturar's *Info-GEN* and *Info-REPORTER* for producing custom reports. *(List Price: $145)*
Requires: 64K, 80-column monitor, (other requirements not available).

Info-Pros, Inc.
2102 Business Center Dr. #132
Irvine, CA 92715
(714) 851-8975

Filemanager

675 A disk-based file management system. Features include user-defined formats, indexing capability on one or two fields, fast sort and search on any combination of fields, and full-screen input and edit. Single keystroke commands allow users to create customized mailing lists, inventory and business records, and customer lists. *(List Price: $200)*

Requires: 64K, one disk drive.

Synapse Software
820 Coventry Rd.
Kensington, CA 94707
(415) 527-7751

EasyFiler

676 A data base management system that allows users to enter, manipulate, and report a variety of data. The system is designed to handle up to 100MB of data (assuming the disk will store that much). *EasyFiler* has its own limited editor, making it possible to create form letters or use the program as a stand-alone mailmerge. Each listing (record) in the data base can have up to 50 items, and any text field may contain up to 255 characters within a maximum record length of 1,000 characters. Seven different field types may be assigned. *(List Price: $400)*

Requires: 64K, two disk drives, 80-column monitor.

Information Unlimited Software
281 Arlington Ave.
Berkeley, CA 94707
(415) 525-9452

Data Handler

677 A data management program that can generate master data files and multiple screens for data input and maintenance. It can generate subfiles, permitting direct access to segments of a data record. Users compute fields of a record and utilize password features. Screen formatting includes reverse display options. It can be used to generate cross-reference directories of data files, reports with subtotals, and mailing labels. *(List Price: $250)*

Requires: 64K, two disk drives.

Comsen Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
(717) 737-2049

Info-GEN

678 A multikey file management system designed for first-time computer users. It aids the user in defining a master data file and designing its data entry screen. File maintenance, standard report, menu, and utility programs are generated as BASIC programs. The file access is an assembly language subroutine using a binary tree structure; no key or file reorganization is necessary. *Info-GEN* interfaces with the manufacturer's other software packages. (see *Info-SORT* and *Info-REPORTER*). *(List Price: $295)*

Requires: 64K, 80-column monitor, (other requirements not available).

Info-Pros, Inc.
2102 Business Center Dr. #132
Irvine, CA 92715
(714) 851-8975

VisiFile

679 A program that stores business records in a flexible format. It can be used for simple applications such as organizing a mailing list, or complex ones such as inventory management. A single disk stores up to 12 files. A maximum of 32,000 records can be stored within each file. Users with 64K of memory can specify up to 48 fields per record, and users with 256K can specify up to 128 fields. The program is menu driven and includes a help feature to aid user understanding. *VisiFile* is part of VisiSeries, a set of integrated programs by VisiCorp. *(List Price: $300)*

Requires: 64K, one disk drive.

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
(408) 946-9000

VisiDex

680 A personal business filing system that operates like a set of cross-referenced index cards. Applications include personnel information, sales reports, financial details, or short reports. A template of specific information can be created into which identical sets of data may be entered. Each "card" can be stored on disk and cross-referenced against a number of special words or dates (called "key words"). *VisiDex* is part of VisiSeries, a set of integrated programs by VisiCorp. *(List Price: $250)*

Requires: 64K, one disk drive.

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
(408) 946-9000

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- **Directly expands memory to 256K Bytes. Replaces three 64K Byte cards. (larger configurations available)**
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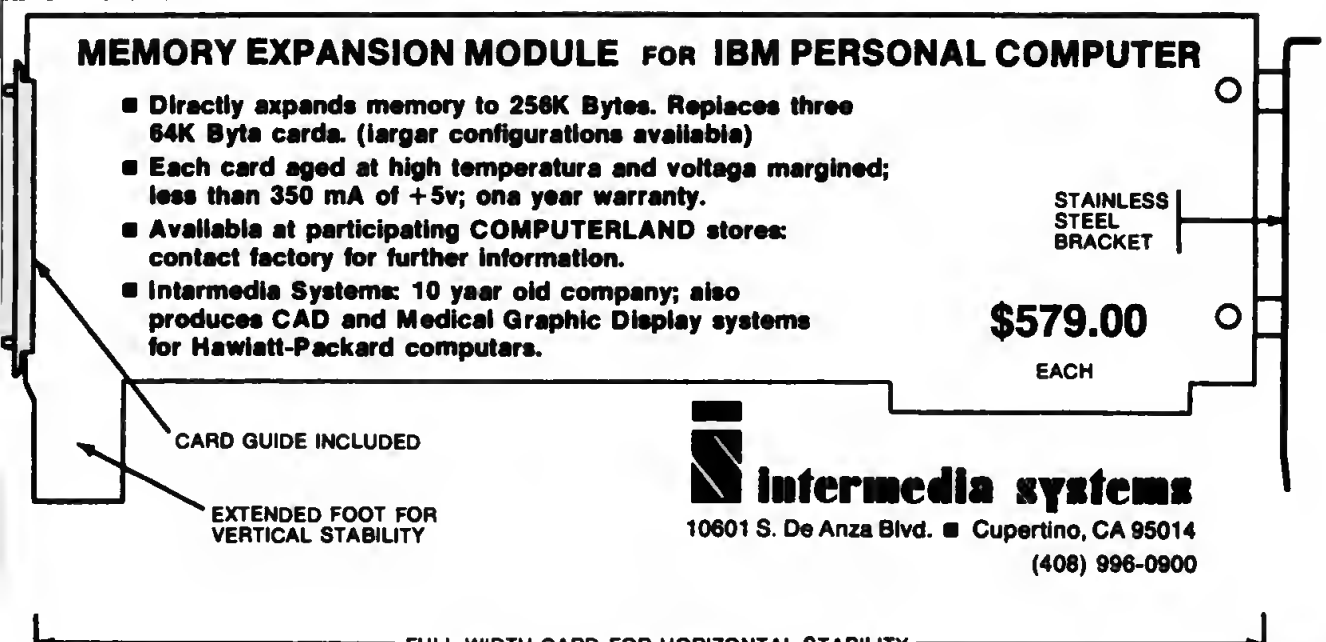
- **Available at participating COMPUTERLAND stores: contact factory for further information.**
- **Intermedia Systems: 10 year old company; also produces CAD and Medical Graphic Display systems for Hewlett-Packard computers.**



intermedia systems
10601 S. De Anza Blvd. ■ Cupertino, CA 95014
(408) 996-0900

DATA MANAGEMENT

FlexiData

681 A ganaral purpose data file manager that enables complete developmant of stand-alone systems. A data dictionary is first created to define and describe date fields. Tha dictionary is then used to design data entry screens, inquiry displays, and custom reports. Screen, display, and report parameters may be saved and filed for later recall. All parameters may be combined and directly accessed through user-designed menus, theraby bypassing the usual *FlexiData* system prompts.

The system allows entry of conditional criteria to control displays and reports, with run-time prompting for variable paramaters. Password access levels can be defined to control both reading and updating files at the field level. A browse option allows files to be saarched for information. Dafining data fialds in the dictionary includes editing options, halp messages, end fields that may be calculated from other fields. Either a monochrome or color adapter can be used. *(List Price: $495)*
Requires: 48K, one disk drive, printar.

New Venture Systems
P.O. Box 2141
Chesapeake, VA 23320
(804) 482-1889

QSORT

682 A genaral purpose sort program capable of sorting any records placed in memory. Used to sort mailing lists, stock instructions, and sample programs, it has a capacity of 8 million records. *(List Price: $25, documentation $3)*
Requires. 64K, one disk drive.

Mirocle Computing
313 Clayton Ct.
Lawrence, KS 66044
(913) 843-5863

DataFax

683 A menagement system that organizes information into folders. Each folder contains individual "pages" of information that can be changed, added to, or deleted. Folders consist of screens and identifying keywords, which allow cross-referencing end file eccess. Users can expand to e hard disk and upload or download Information between other programs. The program is compatible with the communications package, *DataLink*, by tha same manufacturar. *(List Price: $299)*
Requires: 64K, two disk drives, 40- or 80-column monitor.

Link Systems
1640 19th St.
Santa Monica, CA 90404
(213) 453-1851

Btrieve

684 A file retrieval system that provides application developers with random and sequential keyed access to records in a data base. It includes an interface via subroutine calls for programs written in BASIC and other high-level languages. Other features include multikey access to an unrestricted number of records, automatic maintanance of kay structures, multiple volume files, input/output buffering, built-in file integrity controls, and a set of utilities for file maintenance and creation. *(List Price: $295)*
Requires: 48K, one disk driva.

SoftCroft, Inc.
P.O. Box 66
Melbourne Beach, FL 32951
(305) 725-8665

The Data Handler

685 A program that provides file management in MMSFORTH. The program can address over 500K subfile size, permits all-data disks, and includes sample files and routines for mailing lists and checkbook balancing. *(List Price: $59.95)*
Requires: 48K, ona disk drive, MMSFORTH V2.1.

Miller Microcomputer Services
61 Lake Shore Rd.
Natick, MA 01760
(617) 653-6136

T.I.M. III Version 3.2

686 A deta base manager thet is faster than earlier versions. It provides new features such as global search, a replace option, and a word processing intarfaca with *WordStar/MailMerge, EasyWriter II*, Select, and other word processing programs. New printer options have been added for more diversified system configurations. *(List Price: $495)*
Requires: 64K, two disk drives.

Innovative Software
9300 W. 110th St. #380
Overland Park, KS 66210
(913) 383-1089

Dynaform

687 A program that combines with the *Final Copy* word processor for complete data entry and data management capabilities. Formets ere interactively definad, and each file is stored and indexed with a keyed sequential access method (KSAM). Any file or group of files may be selected directly from the editor in *Final Copy* with full sorting powers. *(List Price: $295)*
Requires: *Final Copy*, (othar requiremants not available).

Ticom Systems Inc.
6015 Scarlett Ct.
Dublin, CA 94566
(415) 829-7550

Sort/Merge

688 A program that sorts sequential or direct files, builds and marges key-index or address-out files, and saves end reuses sort specifications. *(List Price: $65)*
Requires: 64K, two disk drives, Epson or IBM printer.

Professional Software Concepts
P.O. Box 483
Hazelwood, MO 63042

RL-1 Relational Database Management System

689 A DBMS that presents data in tabular format. This allows tha user to answer questions by learning selection, projection, and join. The System includes relational data base, query language, relational editor, program interface, and file transfer programs. Several data processing application packages are also available. *(List Price: $495)*
Requires: 96K, two disk drives.

ABW Corporation
P.O. Box M1047
Ann Arbor, MI 48106
(313) 971-9364

MAG/sam

690 A keyed file management system that includes random, sequential, and generic record retrieval access. Other features include multiple key and record delation with automatic space reclamation. *(List Price: $295; manuol only, $25)*
Requires: 32K, one disk drive.

Micro Applications Group
20201 Sherman Way #205
Canoga Park, CA 91306
(213) 700-1426

MAG/base Levels I, II, III

691 A data base management system designed for end users as well as systems developers. Three levels offer progressively sophisticated functions. Multikeyed data files may be created, end reports, forms, and quaries may be produced without programming. Written in CBASIC and CB-80, *MAG/base II* and *III* come with an Advanced Report Writer option, a report generator that allows users to reed up to five files simultaneously. *(List Price: MAG/base I $295; MAG/base II $495; MAG/base III $795; Advanced Report Writer option $195; manuals only, $35-$55)*
Requires: 48K, 52K, two disk drives (180K each), CP/M-88.

Micro Applicotions Group
20201 Shermon Way #205
Canoga Park, CA 91306
(213) 700-1426

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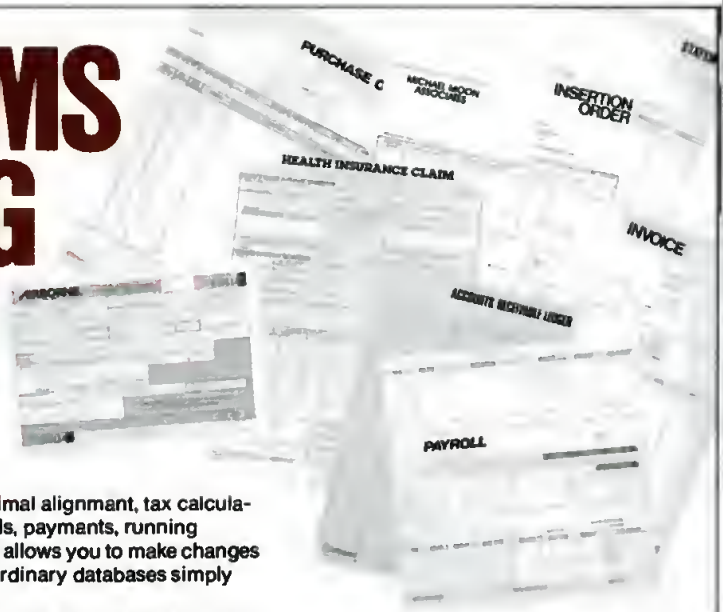
WHY A FORMS PROCESSING DATABASE?



Ever since the introduction of low-cost microcomputers, business professionals have asked for a systam that lets office workers use the knowledge they hava and tha procedures they alraedy undarstand.

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Juat about any form in your office can provida a familiar and easily mastared interface to a personal computer. Simply copy a form to the computer screen and you'ra set.

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- Personnal Histories
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- Purchase Orders

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VersaForm supports both floppy and hard disk sub-aystems. You can swap data files between diffarent systems through a hard disk-besed network. From remote locations data disks can be consolidated into company-wida raports.

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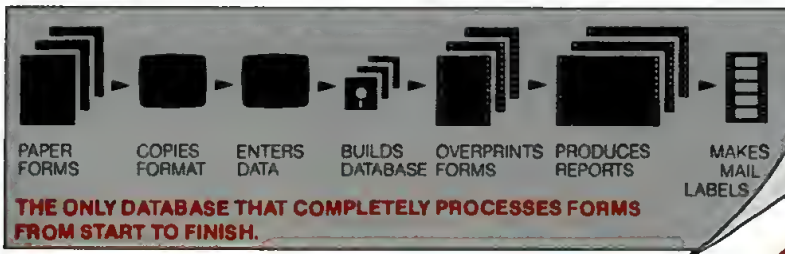

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Applied Software Technology
14125 Capri Drive
Los Gatos, CA 95030
408/370-2662

DATA MANAGEMENT

FABS/PC

692 An enhanced varsion of the FABS and FABS-II. This *DOS*-compatible *8088/8088* assembly language subroutine is designed to provide rapid access to large data files (up to 65K records depending on key size) and 512-byte nodes. Avarage access time is one second or less.

Variable length keys and duplicate kays are supported. Multiple primary keys can be maintained in a single tree providing primary access to data files on more than one key. ASCII keys can be specified, up to 100 bytes. Integer keys (0 to 65535) can be specified to occupy only two bytes in the trea. Multileval sequencing is supported.

The program can be automatically loaded and made resident for use at any time by IBM BASIC. Data record keys are maintained in a key-sequential, multipath, balanced tree structure. SEARCH NEXT and SEARCH PREVIOUS commands provide sequential access to data files at several keys per second.

An extra name and address file in BASIC NAMADD is included as a usabla example for applications programs. *(List Price: $195)*
Requires: 64K, (other requiremants not available).

Computer Control Systems, Inc.
298 21st Terrace S.E.
Largo, FL 33541
(813) 586-1886

Condor Series 20

693 A data managemant program that contains the entry level Series One and Series Two programs. Series 20 was written so first-time users could create programs. The program aids in simplifying information processing, inventory control, accounting functions, sales forecasting, personnel reporting, and other business applications.

Users can develop a completely menu-driven applications system without additional softwara or programming, and design custom applications programs in which the DBMS programs operata transparently.

The Series One antry leval subset consists of a single file for transaction processing capabilities. Series Three allows for multiple-fila and transaction procassing. It includes the Condorquery feature for allowing up to eight data items as an index for a data base. *(List Price: $995)*
Requires: 80K, two disk drives, CP/M-86 or MS-DOS.

Condor Computer Corporotion
2051 S. Stote St.
Ann Arbor, MI 48104
(313) 769-3988

Total Information Management (T.I.M.)

694 A data base management system that generates and summarizes files, mailing lists, and employee records. The data can be accessed and searched in a number of ways. *T.I.M.* provides help screens and function key legends as user aids. Capacities include 32,767 records per file, 40 fields per record, and 60 characters per field. *(List Price: $500)*
Requires: 64K, one disk drive, parallel printer.

Innovotive Softwore, Inc.
9300 W. 110th St. #380
Overlond Pork, KS 66210
(913) 888-0154

Dataentr 200

695 A set of subroutines added to an application program to simplify programming and improve operational characteristics of keyboard data entry. A data entry form is "drawn" on the display screen. The subroutines use this as the only program necessary to control the application-keyed data entry.

Aftar tha complete screen of data has been entared, the system pauses for visual verification of data. If corrections are necessary, keying tha fiald number allows the single field to be reentered. When the operator is satisfied all data has been input correctly, the Enter key releases data for the application program to process. *(List Price: $80)*
Requires: 64K, one disk drive.

Johnson Associotes Softwore
P.O. Box 3069
Redding, CA 96049
(916) 221-0740

Easydata

696 A data base management program that allows information to be entered, retrieved, deleted, or displayed in report form. Processors within the system perform utility functions and protect the integrity of the files within the system. The program uses BASIC, but files writtan under Easydoto can be used with other software, regardless of language.

The fiies are organized as random files using the binary tree linking structure as tha data access method. Key fields defined in a record structure are automatically linked when a record is added or updated. This techniqua eliminates the need to sort or arranga a file when data is extracted or reported. *(List Price: $250)*
Requires: 64K, two disk drives, (printer optional).

Norell Dato Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

Info-REPORTER

697 A report-writer program designed for novices who wish to creata, replace, or delete reports associated with a data file. After reports are designed by the user on the screen, a BASIC program is generated. Users with some BASIC programming knowledge can add additional statemants to the report program.

Info-REPORTER outputs selectively to a parallel or serial printer, asynchronous communications port, or screen. Users specify printing for report titles; column headings and format; detail lines, content, and format; and total lines, content, and format. Multiple files can be used for input and output. Multiple levels of control breaks based on input or calculated data, with automatic totaling, subtotaling, and averages can be specified. Multiple file access methods are included. The program interfaces with *Info-SORT* and *Info-GEN* from the manufacturer. *(List Price: $195)*
Requires: 64K, 80-column monitor, (other requirements not availabla).

Info-Pros, Inc.
2102 Business Center Dr. #132
Irvine, CA 92715
(714) 851-8975

ISAM Database

698 The *ISAM* (Indexed Sequential Access Method) provides keyed access to data files for reading, writing, updating, and deleting records within a file. *ISAM* sorts, searches, updates, and provides dynamic disk spaca management. It supports record buffering, searching in both forward and backward, and access of up to seven *ISAM* files. A complete name and address program shows file statistics, addition, deletion, updating of records, and open/close file capabilities. *(List Price: $69.95)*
Requires: 48K, one disk drive.

Ensign Softwore
2312 N. Cole Rd., Ste. E
Boise, ID 83704
(208) 378-8086

Selector V

699 A self-contained triad that permits users to manage multiple file applications. The program includes two report generators that permit users to produce self-compacting labels up to eight on a line and multipage invoices or sales orders without line number limit, and with unlimitad cross-referencing. The program must operate with Baby Blue, which requires an additional 64K of memory.
(List Price: $495)
Requires: Baby Blue, 48K, one disk drive.

Micro-AP, Inc.
7033 Village Pkwy. #206
Dublin, CA 94566
(415) 828-6697

DATA MANAGEMENT

Management Information System Builder

700 Software that is designed to enable nonprogrammers to build management information applications. The program includes data entry, query, report generation, data file listing, and sorting capabilities. Written in APC BASIC. *(List Price: Not available)*

Requires: 64K, two disk drives, APC BASIC.

American Planning Corporation
4600 Duke St. #423
Alexandria, VA 22304
(703) 751-2574

Name Directory

701 A data base management program capable of storing 1,200 records on a single disk. It produces mailing labels, record lists, and index-card copy according to user-defined catalog codes. It also sorts geographically by area codes, states, zip codes, or partial zip codes. When searching or write/editing records, information is displayed on the screen in an index-card format. The menu directory selection allows the user to search for a name, record groups, print list or mailing labels; write/edit records; and initialize new disks. Other features include interactive operator prompts and security lock for access. *(List Price: Not available)*

Requires: 16K, one disk drive, printer.

Torrtec Enterprises
P.O. Box 81
Commock LI, NY 11725
(516) 543-6579

SEED-16

702 A data base management system under which both network and relational views of a user's data base are supported. It allows users to maintain an integrated data base for expansion of software systems, such as adding a record for another program to utilize without revising existing programs. Data is kept consistent and secure while passwords can protect the privacy of any portion of a data base.

A Seed-16 data base can be accessed by programs written in FORTRAN, COBOL, or Pascal. Users can also use the Harvest query language or the Bloom report writer. *(List Price: $1,495, Harvest $745, Bloom $745)*

Requires: 192K, two floppy disk drives, (hard disk drive recommended).

Micro Decisionware
4890 Riverbend Rd.
Boulder, CO 80301
(303) 443-2706

R/DOS

703 An operating system that supports a relational data base. The user can create records of varying lengths (65K maximum) that contain a variable number of attributes, values, and subvalues. R/DOS handles the physical storage end recall of data, and provides users with a data dictionary for each file. Each dictionary entry associates a word with the relationship being defined, allowing the user to specify data, and allowing the PC to decide how it is to be done.

R/DOS supports up to 128K, printer and adapter, and additional disk storage, either floppy or hard. *(List Price: $300 for a transferable license to use the program on a single machine)*

Requires: 64K, one disk drive, serial interface.

Cosmos Inc.
10626 148th Ave. SE
Renton, WA 98056
(206) 226-9362

ViewData

704 A menu-driven program that includes interactive help manuals built into the software for overview and quick reference. The program supports multiple user-defined data tables and can be used to input/output forms. The forms serve as a window into the data table and are used to enter, browse, change, and print information. Since many different forms can be created for each table, each user can see the data table differently.

Other features include user-definable record size, field type, and width. User-defined print formatting is available for custom reports. Information can be retrieved in ascending and descending order.

Indexes ara created for each data table on major and minor key fields. The program supports full read, write, and modify data security and includes backup, copy, and recovery capability. The program can support up to 40 fields per record and 26 forms per file.

Full support for hard disk drives and an optional Query Language are included. Query Language features include English-like commands, computed fields, increased report generation flexibility, batch posting and updating, and telephone communication betwaan data bases. *(List Price: $225 including manual; manual only, $19.95; Query Language $75)*

Requires: 64K, two disk drives, (printer recommended).

Insoft, Inc.
10175 S.W. Borbur Blvd. #202B
Portland, OR 97219
(503) 244-4181
Source: *ST1765*

File Master

705 A comprehensive file maintanance program that allows users to define a file and maintain data in the file via full-screen displays. The record-oriented functions include add, change, delete, view, and append (automatic add). Record selection criteria can be specified for the find and print functions, which display records matching the search criteria and produce a user-customized sorted report respectively. Other functions include file statistics, initialization, reorganization, and support of DIF (*VisiCalc*) files. *(List Price: $79.95)*

Requires: Not available.

N.F. Systems
P.O. Box 76363
Atlanta, GA 30358
(404) 252-3300

Datamaster

706 A data base management system that provides variable-length records, user-defined input and report formats, reformatting, or previously entered data records. *(List Price: $800)*

Requires: 128K, two disk drives, printer.

MicroCorp
913 Walnut St., P.O. Box Q
Philadelphia, PA 19107
(215) 627-7997
Source: *TCM033*
CompuServe: *70335,1027*

LogiCalc

707 A spreadsheet program that contains built-in financial functions such as linear regression, present value, depreciation, and consolidation operations. Conditional expressions allow "what if" processing to be used with relational and logical operators. Features include column formatting for manipulating column width and column precision, and a dump utility allowing users to obtain a hard copy of the model to facilitate audit trails. The Merge command allows two or more files to be combined, and the Print command allows output paramaters to be varied according to user specifications.

If the report being printed exceeds the width of the printer, *LogiCalc* automatically splits the report into two or more pages, which can be laid side by side to form the complete report. *LogiCalc* interfaces with the manufacturer's *LogiQuest* (a relational data base), *Asset* (an accounting package), and a word processing program. *(List Price: $190)*

Requires: 64K, one disk drive.

Software Products International
10343 Roselle St., Ste. A
San Diego, CA 92121
(714) 450-1526

LogiQuest III

708 A relational data base that uses a subset of IBM's SQL relational query language and offers single and distributed processing capabilities. Features include multiple file processing, a user-definable screen mask (displaying up to eight pages per record), an arithmetic expression evaluator that combines fields in formulas, and "what if" conditional expression processing on selected fields.

The program scans for records containing partial information and finds records that quelify on a variety of search criteria, using relational and logical operators with multiple files. It also sorts records using up to 15 key fields. A report genarator lets users define report formats, headings, page footings, subtotals, and level breaks. A built-in erithmetic and logic processor enables users to custom design specific reports. *LogiQuest III* interfaces with *LogiCalc* and *Asset*, also by Software Products International. *(List Price: $550)*

Requires: 64K, one disk drive.

Softwore Products Internotionol
10343 Roselle St., Ste. A
Son Diego, CA 92121
(714) 450-1526

FileClerk

709 A data base management system that permits the creation of records up to 1,250 characters long, with user specification of as many fields within each record as desired. The user defines ell fields and can choose to have records indaxed or nonindexed. The program also handles numeric calculations up to 250 digits, and automatically creates a backup file for all records. *(List Price: $50)*

Requires: 48K, one disk drive, (printer recommended).

Softwore Laborotories, Inc.
8924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309, (614) 889-5083

Comdat

710 A data base management system that permits tha user to define antry and maintenance screens to a sequential, direct, or keyed deta file. It generetes reports and mailing or all-purpose labels. *(List Price: $250)*

Requires: 64K, ona disk drive.

Comsen Inc.
20-A Erford Rd.
Lemoyne, PA 17043
(717) 737-2049

Mini Data Base Manager

711 A data base management program that sorts and edits up to three files of 100 records each. The files may be user-defined. *(List Price: $10)*

Requires: 48K, one disk drive.

Softwore Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309, (614) 889-5083
CompuServe: 71535,1670

KeyWord in Context Reference (KWIC-REF)

712 A program that cross-references text for leter retrieval by key word combinations. It has the capacity of 32,000 files and 32,000 key words, allowing thousands of cross-refarences. An on-line tutoriel makes it easy to learn. *(List Price: $495)*

Requires: 64K, two disk drives, (hard disk recommended).

Chen Informotion Systems, Inc.
1499 Bayshore Hwy. #205
Burlingome, CA 94010
(415) 692-4358

Physician Office System (POS/1)

713 An accounts receivable system designed for easy learning and use. It is entirely menu-driven with full-screen data entry and correction capability. *(List Price: $950)*

Requires: 64K, two disk drives.

Chen Information Systems, Inc.
1499 Bayshore Hwy. #205
Burlingome, CA 94010
(415) 692-4358

dBASE II

714 A relational data management tool to help experienced and novice users construct and manipulate numeric and character information files. This English-lika program-building language allows for sort, edit, or display of data base information directly from the keyboard. Users can also write menus and programs to support specific applications including generel ledger, accounts receivable, accounts payable, sales-tax record, payroll, mailing labels, end inventory control. Full-screen editing includes Zip, a screen-formatting genarating program. A 350-page manual, demo disk, and full system disk are also included. After-sales support is provided by user groups and dealers. *(List Price: $700)*

Requires: 128K, one disk drive, CP/M-88 or DOS.

Ashton-Tote
9929 W. Jefferson Blvd.
Culver City, CA 90230
(213) 204-5570
Telex: 499-0285

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FORTH SPECIAL ISSUE BYTE Megazine (Aug 1980) - A collector's item for Forth users and beginners $4.00*

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(617) 653-6136

DATA MANAGEMENT

Super Index

715 Indexing that lets the computer be used as if it were a keyed file system. The user types in a key for the information to be stored, and then up to ten lines of data, which can be accessed in a variety of ways. *(List Price: $45; monuol only, $10)*

Requires: 48K, one disk drive, (printer optional).

Metomorphics, Inc.
154 Montgomery Ave.
Bolo Cynwyd, PA 19004
(215) 668-9000

Database Management

716 A data base managemant program that allows the user to define and manipulate files of any description. *(List Price: $49.95; documentotion only, $15)*

Requires: 64K, one disk drive.

Howe Softwore
14 Lexington Rd.
New City, NY 10956
(914) 634-1821

Jinsam Executive

717 A data base management system that can accommodate almost any application. A simple five-letter file name can set in motion the production of reports, letters, billings, sales or research analyses, and modeling. Several users can access the data base to perform different tasks simultaneously. Five levels of password entry operate, and information can be restricted to one or two computers. It features 65,000 records of almost any length, an unlimited number of fields, an automatic calculator, and a free-form report generator. *(List Price: $795–$1,295 depending on options)*

Requires: 128K, two disk drives or one hard disk drive.

JINI Micro-Systems, Inc.
P.O. Box 274
Riverdole, NY 10463
(212) 796-6200

MDBS III

718 Data base management facilities with a free-form data description language that supports nine types of data items, data compression, data encryption, feasibility range checking, multiple relationships between record type pairs, and numerous performance control features. It is intended for serious application developers. *(List Price: $3,120)*

Requires: 64K, one disk drive.

ISE-USA
350 W. Sogomore Pkwy.
West Lofayette, IN 47906
(317) 463-4561

File-It

719 A menu-driven program designed for small to medium data storage needs. The program contains all the options of a data base package. Sorting, searching, and report generation are standard features and require no additional software or costs. The program can be used for keeping track of inventory records, parts lists, name/address/phone lists, and Rolodex systems. It is also compatible with hard disk drives with no modifications. Features include the ability to add data to files, and recall data by record number or item with an option to print. *(List Price: $75)*

Requires: 64K, one disk drive, 80-column monitor.

CMC Microproducts, Inc.
P.O. Box 220511
Chorlotte, NC 28222
(704) 365-1481
Source: TCS818

The Formula

720 Data management software in which the user chooses from menu screens to create free-format reports, job streams, operator menus, and data base systems complete with data entry, logical and arithmetic data manipulation, and sorts. Designed to incorporate programming, analysis, and system design skills so business people, consultants, and others can easily use the system. It also includes documentation, configurability, and interface ability. *(List Price: $595; monuol only, $60)*

Requires: 48K, two disk drives, DOS or CP/M-86, 80-column monitor.

Dynomic Microprocessor Associotes
545 Fifth Ave.
New York, NY 10017
(212) 687-7115

Data Base Manager

721 A program that allows information to be accessed and searched by zip code, date, or region. It saves up to ten custom-designed reports and features "Soundex" phonetic search, which allows the user to locate a name or address without knowing the correct spelling. *Dato Base Monoger* holds up to 1,400 records per disk with DOS 1.0 and up to 2,800 records with DOS 1.10. An instructional tape accompanies the program. *(List Price: $185)*

Requires: 64K, two disk drives, (printer recommended).

Alpho Softwore Corporotion
6 New Englond Executive Pork
Burlington, MA 01803
(617) 229-2924

KSAM/PC (Keyed Sequential Access Method)

722 A keyed index file system that may be merged into a BASIC program and called using simple GOSUB from BASIC. It allows the user to key or index files by a meaningful field stored on disk and offers rapid random access to any record in the file by key field. Commands include Create, Open, Close, Read, Read Naxt, Write, Rewrite, Delete, and Kill. *(List Price: $69.95)*

Requires: 32K, one disk drive.

PRODATA Inc.
663 S. Copitol Blvd.
Boise, ID 83702
(208) 342-6878

WORD PROCESSING / TEXT EDITING

PowerText

723 A comprehensiva word processing system with stored format files to define correspondence styles. The system does all layout automatically with no limit to document length. *PowerText* supports virtually all printer functions and printers. Form-letter capability, automatic cover pages, and table of contents ability are provided along with automatic pagination, header and footer generation, and proper placement of closing material. A bootable system supports extended mamory, RAM disk, double-sided double-tracking drivas, and serial printer interfaces. No other software is needed. *(List Price: $399)*

Requires: 64K, two disk drives, printer.

Beomon Porter, Inc.
Pleosant Ridge Rd.
Horrison, NY 10528
(914) 967-3504

Window

724 A full-screen text editor that makes extensive use of the PC's screen and keyboard. All keys on the PC keyboard are fully supported. Users can create or edit text documents, correspondence, or programs in any of the popular programming languages.

Features supported include all cursor movements, scrolling in four directions, search and replaca, insert and delete characters and lines, move and copy text, split and join lines, text files larger than available memory, and fully descriptive messages. *(List Price: $200 including documentotion)*

Requires: 64K, one disk drive.

Intellect Associotes, Inc.
P.O. Box 365
Holbrook, NY 11741
(516) 472-4449

Vedit

725 A full-screen editor that continuously displays the contents of the file the user is editing. Function keys enable the user to delete a character, word, partial or entire line, or to move a block of text to another place. The user datermines keyboard layout and may use any available cursor and function keys. *Vedit* is also suitable for simple word processing and may be used with any popular text processor. *(List Price: $195; monual only, $15)*

Requires: 64K, one disk drive, DOS or CP/M-86.

CompuView Products, Inc.
1955 Pauline Blvd. #200
Ann Arbor, MI 48103
(313) 996-1299

WordStar

726 A screen-oriented word processing program that allows text entries and revisions to be displayed on the screen during typing as they will appear in print. *WordStor* has editing features including automatic text justification, automatic paragraph indentation, simultaneous printing and editing, and page-break displays. Text can be inserted, deleted, moved, copied, or read from files. Other *WordStar* features include help menus, horizontal scroliing, and column mova. *(List Price: $495)*

Requires: 64K, printar, two disk drives.

MicroPro Internotional Corporotion
33 San Pablo Ave.
San Rafael, CA 94903
(415) 499-1200
Telex: 340-388

Wordix

727 A text formatter featuring automatic hyphenation, footnote placement, chapter and section numbering, table of contents generation, and user-defined macros and data base access and merging. *(List Price: $195)*

Requires: 96K, one disk drive, printer.

Emerging Technology Consultonts, Inc.
P.O. Box 154
Louisville, CO 80027
(303) 666-9472

Formlet

728 A program that aids users in preparing form letters from a selection of prewritten and stored stock paragraphs. Tha program can store up to 10 letters on disk, and users may select among tham at will. Users can also intermix fresh text. *(List Price: $57.95)*

Requires: 64K, one disk driva.

Controct Services Associotes
706 S. Euclid
Anoheim, CA 92802
(714) 635-4055

Perfect Companion Full-Screen Editor

729 A file editing system that uses a full editing command set and true full-screen capability. Written in 8088 machine language. *(List Price: $325)*

Requires: 64K, ona disk drive.

Softwore Innovotions, Inc.
5505 Blair Ooks
P.O. Box 74815
Lewisville, TX 75056
(214) 370-8601

Mince, Scribble, FinalWord

730 *Mince* is a full-screen editor with an automatic virtual memory scheme and multiple buffers and windows for displaying and editing more than one file. It has automatic deletion recovery of text that has been daleted by the commands that work on words, lines, sentances, paragraphs, or user-defined regions.

Scribble is a formatter that allows users to choose a particular text format from numarous format options. It can also generata a tabla of contents with five levels of numbering, footnotes, indices, and appendices.

FinalWord is an integrated word processor that incorporates all the above features. Naw features include eight help menus to explain editing functions, walk-through lessons for documant productions, stata-sava and crash recover that allow users to exit programs at any point without saving or writing the file and reentering the text intact in the buffer. *(List Price: Mince and Scribble $175 eoch, both $300, FinalWord $300)*

Requires: 64K, two disk drives.

Mork of the Unicorn
P.O. Box 423
Arlington, MA 02174
(617) 489-1387

The Programmer

731 A menu format that aids both experienced and nonexperienced BASIC programmers. Those who are familiar with BASIC can write commands using the package. Nonexperienced programmers can use the menu format to create programs. The menu provides questions and a list of available choices. *The Progrommer* aids in developing and updating mailing lists, keeps track of catalog items, and serves as a graphics generator program. It can also create sounds or music, customize small-business accounting systems, interface with another computer device, or serve as a word processing program to print reports. *(List Price: $495)*

Requires: 64K, two disk drives.

Advonced Operoting Systems
450 St. John Rd.
Michigan City, IN 46360
(800) 348-8558, (219) 879-4693

Star-Edit

732 A screen editor suitable for any text processing task including program writing and word processing. The editor can be learned easily by both programmers and nonprogrammers. *(List Price: $225; monuol only, $15)*

Requires: 32K, one disk drive, CP/M-86 or DOS.

Supersoft, Inc.
P.O. Box 1628
Champoign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

Write-On!

733 Word processing software with many formatting and printer commands that enable the user to easily type, edit, and print documents. The program automatically dates letters, maintains mailing lists, generates form letters, and works with most spelling checkers. Users can insert variables into documents during printing. A conversion program enables users to work with a mailing list on another system. Underlining and boldface work can be performed on Epson printers. *(List Price: $129.95)*

Requires: 64K, one disk drive, printer.

Datamost, Inc.
9748 Cozycroft Ave.
Chotsworth, CA 91311
(213) 709-1202

Super Editor

734 A full-screen editor that allows users to make changes to source code or word processing text on any line on the CRT screen. Features include full cursor positioning controlled from the keyboard; scrolling up or down; inserting lines and block copy; move, delete, and exclude commands. The program is written in assembly language. *(List Price: $55 including progrom disk and monuol; monual only, $7)*

Requires: 48K, one disk driva, 80-column monitor.

Frank Schiele Softwore
1375 Tobias Dr.
Chulo Visto, CA 92011
(714) 420-9860

ProText

735 A text processor that uses 1- and 2-character commands to format text. Features include justification, centaring, and print specifications. *(List Price: $75)*

Requires: 48K, (printer recommended).

ProActive Systems Corporotion
505 Chonning Ave.
Polo Alto, CA 94301
(415) 326-2722

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200 cps $1169.00

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RS-232C Interface $679.00
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PRISM 132 ..... $1699.00
4-Color Graphics, Sprint Mode, Dot Plot, and Cut Sheet Guide

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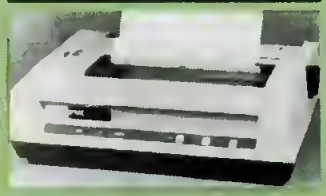

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EasyWriter II
$289.88

EasyWriter II features menu and function-key commands, easy editing, search/replace, merge, automatic pagination, rules, headers, footers, foreground editing/backround printing—without complex formatting codes.

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$329.88

A menu-driven database program that features screen prompts to guide in preparation, handling, and reporting of data

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WORD PROCESSING / TEXT EDITING

Wordflex

736 A word processing program designed to take advantage of the specific features of the IBM Personal Computer, including its large addressing space and special function keys. It can be used with a high-resolution color monitor and can access 512K. *(List Price: $140)*

Requires: 96K, one disk drive.

Nemco
9 Walnut St.
Rutherford, NJ 07070
(201) 933-4933

Electronic Memo Register/ Tickler

737 A package that allows users to store memos electronically. The user types in a message and then assigns a date for its reappearance. Memos can be retrieved for a particular day or for an entire month. When updating a memo, only new information is typed in; the new data is automatically added to the old. *(List Price: $44.95; manual only, $10)*

Requires: 32K, one disk drive, 80-column monitor, (printer optional).

Metamorphics Inc.
154 Montgomery Ave.
Bala Cynwyd, PA 19004
(215) 668-9000

WordPlus

738 A word processing program that makes use of IBM PC function keys. It displays underlining and boldfacing on screen. A user-oriented learning guide is provided, and toll-free customer support lines are available for calls. *(List Price: $295)*

Requires: 64K, one disk drive.

Professional Software, Inc.
51 Fremont St.
Needham, MA 02194
(617) 444-5224

Wordnet86

739 A word processing program that incorporates data entry and text data merge capabilities. Using all the IBM PC's function and cursor control keys, its features include horizontal scrolling, block move and copy, search and replace, and numeric tabbing. Disk file handling, printed system interaction, and help files are menu driven. *(List Price: $395)*

Requires: 64K, two disk drives, printer.

Monoson MicroSystems, Inc.
51 Main St.
Watertown, MA 02172
(617) 924-2124

Text Master

740 A document formatter or text processor that allows users to print letters, documentation, and formatted program listings using simple commands. Approximately 40 commands control page layout such as margins and headings. It has text control for formatting, centering, and variable type fonts; variables for customizing letters are also included along with indexing and tables of contents. DOC is intended for users who can use a text editor to create the needed input files. The program supports different printers through a user-selectable control file. *(List Price: $99.95)*

Requires: Not available.

N.F. Systems
P.O. Box 76363
Atlanta, GA 30358
(404) 252-3300

Screen Master

741 A program that allows BASIC programmers to define a full-screen display or menu that can be used for full-screen input and output from a BASIC program. The program supports protected and unprotected fields, all possible characters, and color combinations. *(List Price: $79.95)*

Requires: Not available.

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Master Word

742 A word processing program that incorporates the features and functions of the PC keyboard. The screen-oriented program includes paragraph formatting, hyphenation, and tabbing as in most standard word processors. Also included are columnar printing and decimal tab stops. The edit function allows search and replacement, block text movement, and file insertion. The formatting is done on the screen at the time of entry so the print image is available immediately.

The printing functions are part of the same program and include form-letter variable replacement, document merging, and automatic index creation. Subscripts, superscripts, and pause for change of the character type wheel or ball are supported. The program is designed to be integrated with the manufacturer's *Master Manager* and *Address Master* programs. *(List Price: $250 Canadian)*

Requires: 64K, one disk drive, letter quality printer.

Micro Masters Software Ltd.
P.O. Box 513
Edmonton, Alberta, Canada T5J 2K1
(403) 922-3088

Docuform

743 A document formatter that allows full use of the IBM printer's capabilities. It is designed for programmers using Trohnic's *Big Ed* text editor. Features include automatic pagination; automatic gathering of words to fit margins; file insert facility for large documents; bold face and 40, 80, and 132 characters per line typefaces; and error scan before printing. *(List Price: $50)*

Requires: Not available.

Trohnic Systems, Inc.
11195 25 Mile Rd.
Utica, MI 48087
(313) 781-4587

Benchmark 3.0

744 Word processing programs that can be operated after a day of self-training. Features include creation and deletion of documents; automatic selection of page length, margins, type style, spacing, and text justification; counter for cursor position by line or screen page, line, and character; automatic page breaks; and automatic search for text. It features horizontal scrolling, graphics, calculator, footnotes, hyphenation, column manipulation, and single-line centering. *(List Price: $499.95)*

Requires: 128K, two disk drives, DOS or CP/M-86.

Metasoft Corporation
711 E. Cottonwood Ln., Ste. E
Casa Grande, AZ 85222
(602) 836-0268

Transaid

745 A program designed to assist translators. It features utilities for conducting terminological research and for constructing and maintaining computerized dictionaries. The dictionary lookup in running text is provided in both on-line and batch modes. The system interacts with the translator to resolve ambiguities. General purpose computerized dictionaries are available for a number of major language pairs. Translation, edit, and review modules increase translation throughput. The translation can be printed as camera-ready copy or transported on magnetic media to a typesetter. *(List Price: $4,995 including a general purpose dictionary and subset)*

Requires: 64K, one hard disk drive, letter quality printer (multilingual desirable).

ALPS
750 N. 200 West #104
Provo, UT 84501
(801) 375-0090

FSEditor

746 A full-screen text editor with block/line copy, move, insert, delete, print, and append. No data is lost due to power failures or disk full. A demonstration disk is available. *(List Price: $125)*

Requires: 64K, one disk drive, 80-column monitor.

Cypress Software, Inc.
P.O. Box 8715
Coral Springs, FL 33065
(305) 755-1513

The Word Wire

747 A word processor for personal and small-business users, designed for letter writing, manuscript and copy development, and limited mailings. *The Word Wire* will interface with the manufacturer's *Data Line* software to produce formatted printed output. *(List Price: $89.95)*

Requires: 64K, one disk drive, 80-column monitor, dot matrix printer.

Soft Spot Micro Systems
24 Dione Dr.
Collinsville, CT 06022
(203) 379-7047

Word Processor (OMRIC)

748 A word processor that provides easy use for the novice. The user/tutorial manual and tutorial text files facilitate quick learning, enabling the user to begin with the more complex features of word processing.

Requires: 64K, one disk drive.

OMRIC Corporation
1268 Main St. #207
Newington, CT 06111
(203) 666-4240

Easytext

749 A word processor that performs common editing, correction, and formatting functions including word wrap, line cut and paste, and auto indentation. It features ten user-programmable function keys and split-screen capability that can be invoked while in the text editing mode. The system allows users to view text from different files or review portions of the same file. In this format, the upper portion of the screen displays current text in formatted form, while the remainder of the screen is used for normal text entry and alteration. Screen size can be adjusted by the user, and normal editing functions can be performed on either screen. *(List Price: $149.95)*

Requires: 64K, one disk drive, (printer optional).

Norell Data Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

Runoff

750 A document-generating program familiar to users of DEC equipment. It provides direct compatibility with *Runoff* running on DEC equipment. Users can download *Runoff* source files from DEC machines, work on them on the IBM PC, and upload them with total compatibility. This program drives Epson and Diablo printers. *(List Price: $250; manual only, $25)*

Requires: 64K (96K recommended), one disk drive, printer.

Automated Office Systems
602 Lookout Dr. #213
Richardson, TX 75080
(214) 669-9966

PMate

751 A text editor developed by Phoenix Software Associates that includes full side scrolling and two visible cursors that can be manipulated from the command mode. Disks are used to manipulate files that are larger than memory. Features include a macro facility with equivalents of various command statements with prompting, and 11 general-purpose buffer registers for either text or macro storage. The macro can be assigned a keystroke sequence, allowing the editor to be customized to user specifications. It includes a configuration program that permits keyboard redefinition to emulate many editors and word processors. *(List Price: $195)*

Requires: 48K, two disk drives.

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
(212) 860-0300
TWX: 710-581-2524
Telex: 640693

WORD PROCESSING / TEXT EDITING

Edix

752 A screen editor featuring multiple windows, multiple buffers, regular expression pattern matching, side-to-side scrolling, on-line help, and on-line tutorial. *(List Price: $195)*

Requires: 96K, one disk drive.

Emerging Technology Consultonts, Inc.
P.O. Box 154
Louisville, CO 80027
(303) 666-9472

EasyWriter II

753 A word processing package that includes single-stroke function keys and a special Help feature for inexperienced users. Pages appear on the screen as they do on paper, complete with headers, footers, on-screen underlining, boldfaca, and double underlining. Printing can be done directly from the editor, aliminating the need to save short memos to disk. A simultaneous print and edit feature makes it possible to route up to ten documents to tha printer while editing anothar. *(List Price: $350)*

Requires: 64K, two disk drives, 80-column monitor.

Information Unlimited Software, Inc.
281 Arlington Ave.
Berkeley, CA 94707
(415) 525-9452

QuickWrite

754 A program for text or program preparation that makas full use of the PC's keyboard to insure operation without requiring special control keys. Arbitrary blocks of text can be moved, deleted, or saved on a soft key for recall from any file. Editing and printing can occur simultaneously. Other features include search, text replacement, and word wrap. The program does not use special text formats, so it can be used for program editing as well as document preparation. *(List Price: $50)*

Requires: 64K, one disk drive.

XyQuest Inc.
P.O. Box 372
Bedford, MA 01730
(617) 275-7194

Edcon

755 A full-screen program editor that can be used to prepare text or programs. It offers the ability to use the keypad while allowing feedback in the form of full-screen editing. This program is written in assembly language. *(List Price: $45; monuol only, $5)*

Requires: 32K, one disk drive.

Automated Office Systems
602 Lookout Dr. #213
Richardson, TX 75080
(214) 669-9966

WIN Editor

756 A full-screen text editor that allows users to type and edit several files simultaneously by dividing the screen into multipla windows. The user can insert, delete, overlay, and move text with 12 functions. All deleted text can be recovered or moved to a nameabla buffer for safekeeping.

The program also acts as a word processor with word wrap, justification, centering, upper- and lowercase conversion, and left and right shifting to dafault or indicated margins. The auto-justify mode allows paragraphs to remain justified evan if the user changes them in the middle. Special printing features and simultaneous printing are also supported with boldface, and underlining is displayed as such on the screen.

WIN is customizable. Functions may be assigned to any key, and modes may be set at start-up or during a session. The Macro facility may be used to create new commands. *(List Price: Not available)*

Requires: 64K, two disk drives.

Ivy Reseorch Inc.
88 Yale Stotion
New Hoven, CT 06520
(203) 789-0676

Word Grinder

757 A dictionary of over 86,000 words on computer media for proofreadar or dictionary programs. Written in ASCII, it comes on seven single-sided or four double-sided data disks. It is compatible with *SpellStor* and *Spellguard* and it may be combined into their dictionaries using thair dictionary maintenance procedures. *(List Price: $130)*

Requires: DOS or CP/M-86, ona floppy disk drive, one hard disk drive, (other requirements not available).

Digitol Word Systems
22458 Venturo Blvd., Ste. E
Woodlond Hills, CA 91364
(213) 992-0514

Select

758 A word processing system that includes an on-scraen, Interactive teaching program *(Teach)* designed for tha novice whose only interest in a computer is its ability to accomplish tasks. The program includes two 5¼-inch floppy disks containing the word processor, *Teach*, and installation instructions; *Superspell* (a proofreading program); *Merge Print* (a program that integrates mailing lists with any Select document); and a refarence manual. *(List Price: $595)*

Requires: 64K, two disk drives, (printer optional).

Select Information Systems
919 Sir Francis Drake Blvd.
Kentfield, CA 94904
(415) 459-4003

Final Copy, Dynaform, Remcom

759 *Final Copy* is a word processing program that combines word and data processing with remota communications for microcomputers. It offers user-oriented menu prompts and ona keystroka alphabetic commands. It sends final documents to the printer, console, or remote channel.

The *Dynoform* program integrates directly with *Finol Copy* to provida complete data entry and data managament capabilities. Formats are interactivaly defined, and each fila is stored and indexed using Keyed Sequential Access Mathod (KSAM). Any file or group of files can be selected directly from the editor in *Finol Copy* with full sorting powers. The Remote Communications modula, *Remcom*, supports terminal type operations such as communications with a host computer. The package also supports direct systam to system links with XON/XOFF protocols. *Remcom* is fully compatibla with *Final Copy*. *(List Price:* Final Copy *$495*, Dynaform *$295*, Remcom *$95)*

Requires: Not available.

Ticom Systems Inc.
6015 Scorlett Ct.
Dublin, CA 94568
(415) 829-7550

Q Text Editor

760 A full-screen interactive text editor that scrolls up and down and conserves mamory spaca (program occupies only 4K). Control keys can be customized. The program has search and replace functions and a stack-type auxiliary buffar. It edits only screen memory. *(List Price: $75)*

Requires: 48K, one disk drive.

Internotionol Softwore Alliance
1835 Mission Ridge Rd.
Santa Barbara, CA 93103
(805) 966-3077

PCWord 2.1, PCForms 2.1, PCScreen 2.1

761 *PCWord 2.1* is a full-screen, menu-drivan text editor designed for optimum keyboard use. Functions include on-line "help," automatic fila saving, and function key controls with menu commands in force.

PCForms 2.1 is a text-formatting system that supports macros nested ten deep and printer specifications for overstrike, double strike, etc.

PCScreen 2.1 is a screen input format generator. *(List Price: $49.95 each)*

Requires: 32K, one disk drive.

Single SOURCE Solution
2699 Clayton Rd.
Concord, CA 94519
(415) 680-0202

Word Perfect

762 A software package designed for multiple use by operators previously untrained in data processing. The system performs word processing functions including merge-document assembly, macro capability, text search, automatic headings, footers, pagination, and footnotes. It will support two letter quality printers. *(List Price: $545)*

Requires: 64K, two disk drives, 80-column monitor, printer.

Sotellite Softwore Internotional
288 West Center
Orem, UT 84057
(801) 224-8554

P-Edit

763 A multiuser context editor for program editing that also edits text. Function keys are labeled. Operators can enter any amount of text from the keyboard or from another file at any place in the text, and the context is maintained and updated. The system includes text search, macro capability, full screen display, document filing and retrieval, and scroll capability. *(List Price: $250)*

Requires: 32K, one disk drive, 80-column monitor.

Sotellite Software Internotional
288 West Center
Orem, UT 84057
(801) 224-8554

Big Ed

764 A line-oriented text editor written for programmers. Features include on-line Help screens; block move, copy, and delete; find and replace strings; copy to and from other files; block scrolling for List; user-defined tabs; cursor movement; and editing keys. Implamented in IBM Pascal. *(List Price: $125 including monual)*

Requires: 128K, one disk drive, printer.

Irohnic Systems, Inc.
11195 25 Mile Rd.
Utica, MI 48087
(313) 781-4587

Easyproof

765 A spelling checker that lists unknown words, marks them in the document, or adds them to the 50,000 word dictionary. A system of algorithms and a prefix-suffix table compresses tha dictionary into fewer than 31K of disk space. In-memory lookup processes over 4,000 words per minuta. Users can add new words, prefixes and suffixes, and customize British spellings. *(List Price: $79.95)*

Requires: 64K, two disk drives, printer.

Norell Dato Systems Corporation
3400 Wilshire Blvd.
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Los Angeles, CA 90010
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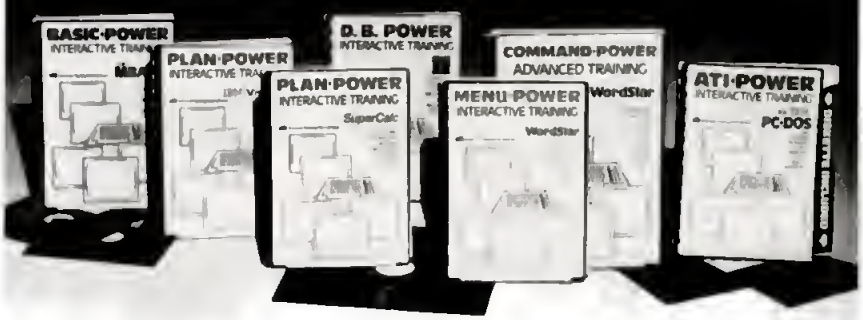

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With D.B. POWER you'll be able to create a data base, enter data, sort data, add, modify, change, and edit important data to generate comprehensive reports — even develop mailing lists — in less than one hour! **$75.00**

BASIC-POWER for MBASIC (IBM)
With BASIC-POWER you'll be able to develop business applications programs that really work. You'll be able to write, enter, debug and use programs that analyze business expenses or organize mailing lists in less than two hours! **$75.00**

POWER PACK for WordStar (IBM)
MENU-POWER Interactive Training helps you create documents, edit with insert, delete and strike over, and print documents. In less that 45 minutes, you'll be able to use the WordStar menus to perform powerful word processing operations.
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WORD PROCESSING / TEXT EDITING

Easyform Text Processor

766 Files prepared using any text editor can be passed through *Easyform* for formatting. *Easyform* performs fill and justification, pagination, page headers, footers and numbering, indants, hanging indents, centering, underlining, and bold print. Multiple text accumulation buffers prepare the index and table of contents automatically. Form letters or standard paragraphs from multiple files can be incorporated. *(List Price: $79.95)*

Requires: 64K, one disk drive, printer.

Norell Data Systems
3400 Wilshire Blvd.
P.O. Box 70127
Las Angeles, CA 90010
(213) 257-2026

ProScript

767 A program that produces formatted documents when used in conjunction with standard text editors. Features include headings, footings, page and paragraph numbering, table of contents, and the ability to handle the emphasized, wide, and condensed print available on the standard IBM PC printer. *(List Price: $95)*

Requires: 48K, one disk drive.

SoftCroft, Inc.
P.O. Box 66
Melbourne Beoch, FL 32951
(305) 725-8665

B&L Word Processing Program

768 A word processor that includes global search and replace, formatting capabilities, and the ability to move text from document to document. It works with color or monochrome monitor.

Requires: 64K, one disk drive.

B&L Computer Consultonts
226 S. Cole, Dept. P-2
Boise, ID 83709
(208) 377-8088

Volkswriter

769 A word processor that includes an interactive on-screen tutorial and a complete reference manual. It uses 20 function keys with an on-screen reference guide. Like other word processors, *Volkswriter* is useful for writing proposals, correspondence, technical manuals, as weli as sales letters and mailing lists. *(List Price: $195)*

Requires: 64K, (other requirements not available).

Lifetree Software, Inc.
177 Webster St. #342
Monterey, CA 93940
(408) 659-3221

APS Text Processing System

770 A program that contains a tag-driven text formatter designed to produce large documents from sourca text. Files may be "imbedded" with source text on request while the files remain open, allowing automatic letterhead inclusion in form letters. *(List Price: $445 if ordered with the APS Advanced System; $500 if ordered with the APS Dual-Screen System)*

Requires: 128K, two disk drives, printer.

Arrix Logic Systems, Inc.
P.O. Box 142
Don Mills, Ontorio
Canada M3C 2R6
(416) 292-6425

APS Advanced System

771 A program that is identical to the *APS Entry System* with several enhancements. Files can be copied and automatically expanded to another length; advancad commands are included in the extended edit subsystem; a "browse" subsystem allows read-only access to files, and the utility subsystem contains a "sorted directory" that allows scrolling over the directory display. *(List Price: $300)*

Requires: 96K, two disk drives.

Arrix Logic Systems, Inc.
P.O. Box 142
Don Mills, Ontorio
Conodo M3C 2R6
(416) 292-6425

Forthwrite

772 Software that provides advanced word processing capability. Features include true-proportional printer drivers with tabbing; outdanting; farm-letter capabilities; and block, file, and keyboard input. *(List Price: $175)*

Requires: 48K, two disk drives, MMSFORTH V2.1.

Miller Microcomputer Services
61 Lake Shore Rd.
Natick, MA 01760
(617) 653-6136

VersaText

773 A word processing system with four main modules: a screen editor, a text formatter that includes text justification, paging, and underlining, a data base program for mass mailing, and a unit that produces giant letters for notices and signs. *(List Price: $149)*

Requires: 64K, two disk drives, 80-column monitor.

TexoSoft
1028 N. Madison Ave.
Dallas, TX 75208
(214) 941-8475, 495-5052

APS Entry System

774 This is a menu-driven program comprising a full-screen edit and utility subsystem, the latter for allocating, deleting, and renaming files. It supports user-defined, fixed-length records with no file size limitations. Screen can be scrolled horizontally to the right or ieft to accommodate records longer than the display. *(List Price: $150)*

Requires: 64K, one disk drive.

Arrix Logic Systems, Inc.
P.O. Box 142
Don Mills, Ontario
Conodo M3C 2R6
(416) 292-6425

Spellguard

775 Software that aids users in eliminating spelling and typographical errors in written materials prepared with a word processor or text editor. The program is used in conjunction with a word processor to find spelling and typographical errors. It proofreads a document for spelling mistakes and typing errors by using a 20,000-word dictionary. Larga text files such as manuscripts and manuals can be proofread in a few minutes. The program is compatible with many existing word processors and is written entirely in machine language. *(List Price: $295 including manual)*

Requires: 32K, two disk drives, DOS or CP/M-86.

Innovative Software Applicatians
The Ploza Building
1150 Chestnut Ln.
Menlo Pork, CA 94025
(408) 727-7634

Textplus

776 A word processing and list management program that edits and formats text, creates and sorts lists, prints mailing labels, produces personalized mass mailings, and creates bar graphs. *(List Price: $200)*

Requires: 64K, one disk drive, 80-column manitar, IBM or Epson printar.

Owl Software Corp.
1605 E. Chorleston Blvd.
Las Vegos, NV 89104
(800) 824-7888, 982-6243 Colifornia

APS Dual-Screen System

777 This program has all the features of the APS Advanced System, as well as allowing two sessions ta be conducted concurrently. The screen can be allocated ta either session alternately with a function key command. *(List Price: $360)*

Requires: 128K, two disk drives.

Arrix Logic Systems, Inc.
P.O. Box 142
Don Mills, Ontorio
Conada M3C 2R6
(416) 292-6425

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MAIN FEATURES	CDP-MPC	IBM-PC*	OTHERS
Microprocessor	16-Bit 8088 8-Bit Z-80 (Opt)	16-Bit 8088	?
USER Memory	128K 1 Mbytes	16K-256 Kbytes	?
IBM PC Compatible Expansions Slots Beyond Professional Configuration[1]	8 Slots	0	?
Resident Floppy Disk Storage	Dual 320K (std)	Dual 160K (Opt) Dual 320K (Opt)	?
Resident Cache Buffer Hard Disk Storage	5M/10M	—	?
OPTIONAL OPERATING SYSTEMS (Supported by Company)[2]			
MS-DOS (PC-DOS)	Yes	Yes	?
CP/M 86	Yes	Yes	?
MP/M 86	Yes	—	?
OASIS-16	Yes	—	?
XENIX	Soon	—	?
OPTIONAL HARDWARE EXPANSION BOARD (Supported by Company)			
RS-232 Communications	Yes	Yes	?
B/W and Color Display Controller	Yes	Yes	?
Expansion Memory	Yes	Yes	?
Z-80 CP/M-80 Board	Yes	—	?
Cache Buffer Hard Disk	Yes	—	?
Time/Calendar Board	Yes	—	?
IEEE Bus Controller	Yes	—	?
8" Floppy Disk System	Yes	—	?
8" Hard Disk System	Up to 40 Mbytes	—	?
Tape Cartridge System	Yes	—	?

For comparison purposes, typical professional configurations consist of 16-Bit 8088 Processor, 128K RAM with Parity, Dual 320K 5-inch Floppies, DMA and Interrupt Controller, Dual RS-232 Serial Ports, Centronics Parallel Port and Dumb Computer Terminal or Equivalent

[2]Columbia Data Products also supports CP/M 80® with an optionally available Z-80 CP/M Expansion Board

*As advertised in BYTE Magazine, August 1982

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3901 MacArthur Blvd
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Telephone 714-752-5245
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P O Box 1118
450 Moenchengladbach 1
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WORD PROCESSING / TEXT EDITING

IEDIT

778 A full-screen editor suitable for both program development and word processing. Users may modify the program to meet their own requirements. Capabilities include full function end special key support, block move/copy, paragraph formatting, page numbering, and multiple copy printing. A spelling checker can be applied to both program development and word processing. *(List Price: $150)*
Requires: 48K, one disk drive.

Innovative Technology, Inc.
2387 Blackstone
Ottawo, Ontario, Canodo K1B 4H3
(613) 521-8391

PCForms

779 A text formattar that offars five mein functions: set text characteristics, text formetting, page control, printer control, and macros. Macros (repeeted functions grouped under enother command) are user-defined and mey be nested up to ten levels deep. Text mey be formatted within lines by embedding commands. Switches allow specifications of additionel files later, causing the program to wait for user intervention in case of error, end can sound a tone when the user is needed. A sister program, *PCWord*, combines to provide full word processing capabilities. *(List Price: $49.95)*
Requires: 32K, (other requirements not available).

Single SOURCE Solution
P.O. Box 578
Concord, CA 94522
(415) 680-0202

EasyWriter

780 An epplication by Information Unlimited Software that transforms the PC into a word processor. Features include upper- and lowercase text creetion and filing, editing, formatting, and final printing of documents or correspondence. Files are stored on 5¼-inch diskettes, ellowing information to be eesily inserted, deleted, or corrected. Three menus are displayed: the Flle Menu, Editor Menu, and Additional Commands Menu. The program is designed to eccommodete users of various skill levels.

IBM EasyWriter Version 1.1 features enhanced capabilities and is faster and easier to use than *Version 1.0*. Current owners of IBM *EasyWriter 1.0* may exchange that version for *EasyWriter 1.1* et no cost, through euthorized IBM PC dealers. *(List Price: $175, IBM Product Center prices)*
Requires: 64K, one disk drive, printer.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 fllinois
447-0890 Alaska, Hawoii

SuperWriter

781 A text processing system with the ebility to creete, edit, end print reports, letters, end other documents. It performs print merge (form letter generation) and proofreads documents for spelling errors. *(List Price: $395)*
Requires: 64K, one disk drive, printer.

Sorcim
405 Aldo Ave.
Santo Cloro, CA 95050
(408) 727-7634

Full-Screen Editor

782 A program that allows users to build text or program files one screen at e time using text editing features. Users can overtype or insert characters, scroll up or down, left or right, end copy or move entire blocks of text. The change command allows one or ell occurrences of e character string to be changed to the new string. When used with the Find and Change function keys, Change allows users to preview potential changes.

An enhenced print formatter is included to provide underlining as well as the type fonts supported by Epson/IBM printers. It supports left end right mergins end can fold long lines onto e new line. It elso provides pagination and titles. *(List Price: $29.95)*
Requires: Not evaileble.

Noto Bene Software
P.O. Box 497
Glenview, IL 60025

Wordvision Writing Tool

783 A word processing program designed for use by writers, rather than clericel workers. It provides control over such features as delete copy, move, one-key phrases, transposition, capital end lowercase letters. Users have control over mergins, tabs, indents, underlining, boldfacing, single and double spacing. The program comes with color stick-on labels for all PC function keys. *(List Price: $49.95)*
Requires: 64K, one disk drive, 80-column monitor, printer.

Bruce & Jomes Program Publishers
6924 Riverside Dr.
Columbus, OH 43017
(614) 889-5083
CompuServe: 71535, 1670

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WORD PROCESSING / TEXT EDITING

Proof Reader, Grammatik

784 Proof Reader is a menu-driven program featuring tha Rondom House Dictionory. It looks up words and does not rely on root-word analysis. Full interactiva corrections show the complete context of unknown words. A menu choice is offared to correct, learn, or accept words. All corrections are double checked.

Crammotik detects typos, punctuation and capitalization errors, unbalanced parentheses, and quotation merks. It enalyzes writing styles for average sentence length, word length, and word use profile. It finds nonstandard usage and spelling errors, and overworked and wordy phrases using a customized dictionary. Errors are optionally marked for correction and sent to a printer or displayed on screen.

Users should specify system type, operating system, number of drives, memory size, and format when ordering. *(List Price:* Proof Reader *$129,* Crammatik *$150,* both *$250,* manuals *$15* for both, *$8* eoch*)*
Requires: 64K, one disk drive.

Aspen Softwore Co.
P.O. Box 339-P
Tijeras, NM 87059
(505) 281-1634

Easyspeller

785 An innovative spelling checker and proofreading package. It contains a vocabulary of over 88,000 words stored in 94K of disk space. It flags misspellings and offers the user a chance to substitute the correct spelling. The system can create supplementary dictionaries for jargon and abbrevietions, and allows the user to correct the same mistake within a file by pressing a single key. The system displays the entire line in which the flagged word appears, enhancing reading ease. It will check any ASCII file written in DOS format. *(List Price: $175)*
Requires: 64K, two disk drives, 80-column monitor.

Informotion Unlimited Softwore, Inc.
281 Arlington Ave.
Berkeley, CA 94707
(415) 525-9452

Newtext1

786 A text processor that functions like Script, the IBM mainframe text processor. Features include text nesting (to 14 levels), automatic table of contents, and index generation. *(List Price: $125; monuol only, $25)*
Requires: 64K, one disk drive.

DB/DC Softwore Associotes
P.O. Box 4695
Monchester, NH 03108
(617) 682-6629

ProEdit

787 A full screen editor that offers horizontal and vertical scrolling, block manipulation, selective and global operations. Source code and documentation come with disk. *(List Price: $50)*
Requires: 32K, one disk drive.

ProActive Systams
505 Chonning
Polo Alto, CA 94301
(415) 326-2722

PCWord

788 A full-screen text editor that contains a Help module. Top and bottom of screen are both clearly indicated during editing. It offers global search ahead and back, raplace, automatic save, and paging up and down. The user may redefina function keys for convenience. It combines with *PCForms* to creata a word processing system for under $100 *(List Price: $49.95)*
Requires: 64K, (other requirements not aveilable).

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P.O. Box 578
Concord, CA 94522
(415) 680-0202

MAILING LISTS

Mail-XI

789 A mailing list program with multiple sort keys, multiple filter criteria, field selection, record delete, and record update. It features an optional report writer that lets users specify report formats on line without programming. Included ara 9-digit zip codes and remark fields. A selection code ranging from *0* to *32,767* is used to classify tha mailing list. The data field can be used for creation dates, last refarenced dates, or expiration dates.

The report writar can be used to print labels or reports of expired records, unexpired records, or records expiring within 60 days. Tha report generator lets users select a record range, a selection coda ranga, and a sort field. Tha number of linas on a paga, tha size of a label, and the width of a print line can be set by an on-lina command. *(List Price: $288; without report writer $198; monuol only, $22)*
Requires: 64K, one disk driva, printer.

Micro Architect Inc.
96 Dothon St.
Arlington, MA 02174
(617) 643-4713

Mailing List (Caldwell)

790 A program that displays mailing lists on screen, allows changes to the list, and prints out names and addresses on labels. It uses variable-length fields, a variabla number of lines, and has over 400 entries per disk. *(List Price: $40)*
Requires: 64K, one disk driva.

Richard Coldwell
2063 43rd Ave.
San Froncisco, CA 94116
(415) 661-7840

Personal Mailer

791 A professional mailing list data base that may be searched, sorted, or printed. It reads and writes files for word processors, spelling checkers, or data base managers. *(List Price: $65)*
Requires: 64K, one disk drive, 80-column monitor.

Computer Age of Son Francisco
825 Masonic Ave. #6
San Froncisco, CA 94117
(415) 921-7792

1st Class Mail

792 Software that offers custom label formatting of up to nine lines per label with up to nine labels across, custom punctuation, multiple labels for each entry, a user-selected message on any line of the label, and a user-defined screen format. It prints singla or tractor-faed envelopes with optional return address, master lists, specially sorted lists, foreign addresses, and 10-digit zip codes.

Multipla disk capability provides extension and separation of data files. *1st Class Moil* features flexible default entries and fast multikey search and sort routines. It provides printer controls for custom label printing and ellows expanded print or other special printer capabilities. *(List Price: $124.95 including disk,* monuol, ond binder*)*
Requires: 64K, one disk drive (two recommended), printer.

Continentol Softwore
11223 S. Hindry Ave.
Los Angeles, CA 90045
(213) 417-8031

Mailing List (Zeta)

793 A menu-driven program for large malling lists that permits selection of some entries by use of a selection fiald. Soma functions are performed by assembler routines. *(List Price: $129.95 including* documentotion*)*
Requires: 64K, one disk drive, 80-column monitor.

Zeto Products
Box 147
Georgetown, TX 78626
(512) 863-3079

MAILING LISTS

Benchmark Mail List

794 A key-driven, self-training, seif-prompting list keeper. Features up to 99 lists per disk, full utilization of function keys, end the ebility to merga with word processing software. *(List Price: Not available)*
Requires: Word processor with keyboard merge feature.

Metasoft Corporation
711 E. Cottonwood Ln., Ste. E
Casa Cronde, AZ 85222
(602) 836-0268

Mailing List (W.A. Dirks Co.)

795 A mailing list program that provides either menu-driven or direct-running mail list capability. Files may hold up to 1,100 names. Entry verification facilities are provided, as well as the ebiiity to print up to four labels ecross. Features include sorting on eny fiald and selecting on any single field based on user input. Source code is included to facilitate user modifications. *(List Price: $79; manual only, $14)*
Requires: 48K, one disk drive, printer.

Wayne A. Dirks Co.
801 E. 10th
Hutchinson, KS 67501
(318) 865-7074

Super Mail

796 A mailing list managar system that features user-defined fields and prompting, selective search and option to print, single- and multifield sorts, and unlversal label printing. *(List Price: $50)*
Requires: 64K, two disk drives, parallal printer.

Enhonced Technology Associotes
3929 Lynn Ave. South
Minneapolis, MN 55416
(612) 929-7889

Mailing List (Alpha)

797 A program that maintains and prints lists in any form selected from e data base of names, addresses, or numbers. Tha data base can be expanded, changed on screen, sorted, searched, or reformetted, using search and sort routines in six possible combinations. Program capabilities includa formatting labels, adding promotional messages to each label, and printing multipie copies of labels. *Mailing List* holds 900 records per disk on DOS 1.0 and over 1,500 records with DOS 1.10. An instructional tape accompanies the program. *(List Price: $95)*
Requires: 64K, one disk drive, (printer optional).

Alpho Softwore Corp.
6 New Englond Executive Park
Burlington, MA 01803
(617) 229-2924

EZLabel, EZMemo

798 *EZLabel* produces mailing labels and phona lists with 1,000 addresses per disk. Information can be sorted by zip code, last name, or user-defined codes. It can be used with *EZMemo*, a line-oriented word processing program. It creates custom form ietters using *EZLabel* fiies. Users can select eny dot matrix type style and create, edit, and save memos. *(List Price: $39.95 each)*
Requires: *EZLabel*—48K, one disk drive, dot matrix printer; *EZMemo*—64K, two disk drives; IBM printar for both.

Systemics, Inc.
3050 Spring St.
West Bloomfield, MI 48033
(313) 851-2504

Mailing List (Alphanetics)

799 A program that prints single- or doubla-width lebels and machina sorts either alphabetically or by zip code. *(List Price: $29.95)*
Requires: 64K, one dlsk drive.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

Mailtrak

800 A name end address mailing system that prints master listings, telephone directories, and mailing and file labels sorted in a variety of user-selected sequances. Up to 1,200 names can be stored on each disk. Files are in DOS format and can be read by this or othar compatible packages such as IBM's *EasyWriter*. Reports can be printed in compressed, emphasized, or double-strike modes. Written in BASIC, the system utilizes random access files. *(List Price: $65; monual only, $15)*
Requires: 64K, one disk drive, printer.

TCI Softwore
6107 W. Mill Rd.
Flourtown, PA 19031
(215) 836-1406

Mailing List (N.F. Systems)

801 A mailing list program that prints one, two, or three labels and sorts by last name or zip code. *(List Price: $64.95)*
Requires: 64K, one disk drive, (printer optional).

N.F. Systems, Ltd.
P.O. Box 76363
Atlonto, CA 30358
(404) 252-3302
Source: TCK071

Mailing List (Sofware Lab)

802 A program that functions as a personal and business mailing list for the PC. It stores up to 500 entries, which can be sorted by any field maintained in the list. *(List Price: $50)*
Requires: 48K, one disk drive.

Softwore Laborotories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309, (614) 889-5083 Ohio

Mailing List (S.P. Cook)

803 A menu-driven program that sorts on all fields and has an option to print out a sublist of names, called by number, which will provide lists without retyping. It has an optional selection of mail label or envelope printing for an envelope feeder. It addresses envelopes at a rate of 1,200 per hour and prints membership lists. The last field can be used for accounts receivable with totals provided et the end of printout. *(List Price: $89)*
Requires: 64K, two disk drives, printer.

Samuel P. Cook
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

MailMerge

804 A file-merging program used with WordStor to perform word processing projects such as personelized form letters, invoices, and mailing labels. Can "boilerplate" legal documants from a variety of standard paragraphs. *(List Price: $150)*
Requires: 64K, dot matrix or daisy wheel parallel or serial printer, two disk drives.

MicroPro Internotionol Corporation
33 Son Pablo Ave.
Son Rafael, CA 94903
(415) 499-1200
Telex: 340-388

Sapana-Mail-Track-I

805 A mailing program that stores 1,160 records on single-sided end 2,330 on a double-sided floppy disk, and may be searched, sorted across seven data fields, and printed. The program handles 9-digit zip coda. It is menu-driven and includes a user manual. *(List Price: $29)*
Requires: 48K, one disk drive, printer.

Sopano Micro Softwore
P.O. Box 748
Quincy, IL 62301
(217) 224-4337

Copyrighted material

Mail Management

806 A program that generates mail lists and labels, and sorts and extracts on user-specified fields. All work is done within the main data base, which includes over 1,000 names. Features include rapid sorting capabilities. *(List Price: $39.95)*
Requires: 64K, one disk drive, printer.

Alpho Computer Service
P.O. Box 2517
Cypress, CA 90630
(714) 894-6808

Pony Express

807 A mailing program that prints records on levels one to five across, on 132-character-wide paper, 80-character-wide paper, or with cheshire format. Othar features include unlimited numbers of files, machine code sort, record selection with an unlimited number of selection codes, automatic repeat routines for antering records, end correction and deletion routines for updating files. Up to ten files can be merged. Documentation is included. *(List Price: $169)*
Requires: 64K, two disk drives.

Computech
975 Forest Ave.
Lakewood, NJ 08701
(201) 364-3005

Mail Manager

808 A mailing list program that creates and updates address files. Subfiles can also be created, and files can be merged or sorted using a variaty of key fields. The program prints mailing labels, envelopes, and lists. *(List Price: $129)*
Requires: 64K, one disk drive, printer.

Storwore
1629 K Street NW #551
Washington, DC 20006
(202) 466-7351

Mister Lister

809 A commercial-quality mailing list program that includes over 1,000 antries per floppy disk. Entries include company name, contact name, address and telephone numbers. Four option tables with 26 descriptors aach are provided along with three sorting modes, company nama, contact nama, or zip code. The program also prints mailing labels in user-defined format and on fanfold postcards, if required. A master disk list with ona lina per disk entry can be printed with only the entries the user requests. Also included with tha program is the FORTH computer language. It is compatible with WordStor and *MoilMerge. (List Price: $79.95)*
Requires: 64K, one disk drive, (printar recommended).

Internotional Computers
13048 Olive Blvd.
Creve Coeur, MO 63141
(314) 878-8838

Mailing List (Howe)

810 A mailing list program that maintains lists of up to 1,128 namas per diskette. It prints four-line labels in one, two, three, or four columns. *(List Price: $79.95; documentotion only, $15)*
Requires: 64K, one disk drive, printer.

Howe Softwore
14 Lexington Rd.
New City, NY 10958
(914) 634-1821

Address Master

811 A standard name and address package with user-defined categories for selection of mailing label printing or form letter printing. The program provides the abova features when used in conjunction with tha manufacturer's *Word Moster* program. *(List Price: $75 Conodion)*
Requires: 64K, one disk driva, printer.

Micro Masters Softwore Ltd.
P.O. Box 513
Edmonton, Alberto, Conodo T5J 2K1
(403) 922-3088

The Addressor

812 A name and eddress filer systam that produces an alphabetized directory on the printer that can be inserted into a 2-inch by 3-inch binder. Birthdays, enniversaries, and other important dates may be included. It also prints address labels. Tha package includes a tutorial on setting up tha filing system, a datailed manual, and a disk that may be backed up. *(List Price: $19.95)*

Single SOURCE Solution
P.O. Box 578
Concord, CA 94522
(415) 680-0202

Mailing Label Program

813 A mailing list program that stores 150 records on one disk drive and 600 on a second. Sixteen fields are filed under three categories. Fiva sorting options give printing flexibility. *(List Price: $65)*
Requires: 48K, one disk drive, printer.

MBS Software
12729 N.E. Hossald St.
Portlond, OR 97230

COMMUNICATIONS

LogOn

814 Software that exchanges text, binary, and data files from a micro to another micro, mini, or mainframe computer at 300 baud. Users can send and receive messages on bullatin board systems, and access on-lina data bases. The program supports auto-dial and redial, and features a directory, redefinable keyboard, and column settings from 1 to 80. *LogOn is* written in UCSD Pascal. *(List Price: $150)*
Requires: 128K, Pascal, two disk drives, modem.

Ferox Microsystems, Inc.
1701 N. Ft. Myer Dr.
Arlington, VA 22209
(703) 841-0800

EDS Communicator/Text Editor

815 A communications and text editing program that transfars data from various sources to the PC, including *VisiCalc* files, text files, and any sourca programs in ASCII format. The text editor modifies and manipulates data to the format needed. Auto-dial and auto-answar functions allow one-button dial-up to send and receive messages, electronic mail, and graphic imeges.

Auto-logon allows multilayer security and passwords to be bypassed, giving instant access to a variety of networks and network bulletin boards such as Networks, Networks II, Dow Jones, CompuSarve, and The Source through Telanat and Tymnat. *(List Price: $180)*
Requires: 48K, one disk drive, 80-column monitor, serial interface, modem, (Hayes Stack Smartmodam required for auto-dial, auto-answer).

Electronic Dato Systems Corporation
7171 Forest Ln.
Dollas, TX 75230
(214) 661-6188

Asynchronous Communications Support Program

816 Software that turns tha PC into a communications terminal with various computers supporting ASCII. It communicates between two PCs and accesses computers running IBM VM/370 or TSO operating systems if they are equipped with appropriate interface hardware. Access is made by local cable connection or over remote common carrier lines. An upload/download facility transfars data and program files. *(List Price: $40, IBM Product Center prices)*
Requires: 64K, one disk drive, serial interfece, modem.

IBM Corporation
System Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alosko, Hawoii

COMMUNICATIONS

Communicator/Text Editor

817 A communications and text editor program that allows the PC to communicate with any Bell 103 compatible system, including word processors, mainframes, minis, and micros. It also enables the PC to communicate with networks and services; to transfer data files, VisiCalc files, BASIC and other source code in text format; to edit and create ASCII files and program source code; and to provide the means to translate program code to PC usable code.

Features include color, intensifications, sound, and automatic spill-over files when memory is full. Data can be input from disk or keyboard and inserted between existing data in memory. *(List Price: Not available)*

Requires: 48K, one disk drive, Hayes Stack Smartmodem, 80-column monitor, serial interface.

Electronic Data Systems Corporation
7171 Forest Ln.
Dallas, TX 75230

Comload

818 An intelligent communications package that allows communication with a wide variety of computer systems. It can upload and download text files and save data on disk. Program features include a scrolling window and word wrap. *(List Price: $99.95)*

Requires: 64K, one disk drive, serial interface (printer optional).

Dalton Systems
P.O. Box 5034
Willowick, OH 44094
(216) 928-6033

Mainframe Communications Software

819 A remote job entry station emulator for the PC. *EM 3780* may be used with any host computer supporting the IBM 2780/3780 BISYNC protocol. *(List Price: $650)*

Requires: 48K, one disk drive, DOS or CP/M-86, Advanced Communication Card manufactured by A.S.T. Research of Irvine, California.

Wilmot Systems, Inc.
122 E. 42nd St. #205
New York, NY 10168
(212) 661-3063

Move-it

820 A program that allows users to send and receive files (CP/M, PC-DOS, CP/M-86) from one computer to another, using standard RS-232 serial lines or modems. An error-checking protocol implements the transfer, and functions can be controlled from the local computer, allowing the remote computer to remain unattended.

Move-it can send and receive files betwaen "wire-connected" computars, anabling offices with several computers to send data between them, even if the computers support different disk formats. The program will transfer files from high-capacity to low-capacity disks by allowing tha substitution of empty disks for full ones during the process.

Features include directory displays of local and remote disks, message transmittal to tha remote computer, and display of "retries" during transfers. Use of the "dumb terminal" mode allows users to access time-sharing systems and control smart modems. *(List Price: $150)*

Requires: 32K, serial interface, modem.

Woolf Software Systems
23842 Archwood St.
Canoga Park, CA 91307
(213) 703-8112

Forthcom

821 Communications software in MMSFORTH that allows the PC to operate as a terminal on any computer phone line, provides printer spooling, transfer of ranges of FORTH blocks with data compression and error checking. Menu-driven standard operation to 1200 baud, and modular RS-232-C routines in source code for custom applications to 9600 baud are also featured. *(List Price: $39.95)*

Requires: 32K, one disk drive, serial interface, modem, MMSFORTH V2.1.

Miller Microcomputer Services
61 Lake Shore Rd.
Natick, MA 01760
(617) 653-6136

APPLE-IBM Connection

822 A program that permits the user to send standard files from one computer to another. Communication can be controlled from either computer, send or receive. The program requires two computers, either two PCs or an Apple and a PC. It comes with a short instructional tape. *(List Price: Not available)*

Requires: Two computers, each with ona disk drive, 64K, and communications boards.

Alpha Software Corp.
6 New England Executive Park
Burlington, MA 01803
(617) 229-2924

Dow Jones Reporter

823 A program that enables users to gather business information from the Dow Jones News/Retrieval Service. It provides easy access to financial naws, stock market quotations, and company profiles. Users can view articles from the *Wall Street Journal*, Barron's, and the Dow Jones News Service. As well as providing current news, it also allows review of past news concerning specific companies or industries. *(List Price: $100 including 1 hour of connect time during non-prime time, IBM Product Center prices)*

Requires: 64K, one disk drive, asynchronous communications adapter, modem.

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alaska, Hawaii

PCModem

824 A basic communications package offering both CP/M and ASCII file transfar at speeds up to 300 baud. The function key is driven for ease of operation. It works with most modems. Auto-dial and special functions availabla with the Hayes Smartmodem. *(List Price: $49.95)*

Requires: 64K, one disk drive, (printer optional).

Solution Software Systems
3930 Whispering Trails
Hoffman Estate, IL 60195
(312) 893-5111

PCModem II

825 An enhanced varsion of the original *PCModem*, it supports the new Hayes Microcomputing Smartmodem 1200, which will operate at speeds of 0-300 baud and 1200 baud. It is also Bell 212A-compatible and is able to conduct unattended file transfer between *PCModem II* programs. *(List Price: Not available)*

Requires: 64K, one disk drive, (printer optional).

Solution Software Systems
3930 Whispering Trails
Hoffman Estates, IL 60195
(312) 893-5111

LogOn

826 An auto-dial, auto-answer communications software package that features menus, directory of frequently called numbers and host computer configurations, automatic retransmission of erroneous data, selectable number of columns (screen width), and ability to "chat" off-line without losing carriar. Written in UCSD Pascal 4.0. *(List Price: $150)*

Requires: 64K, serial interfaca, ona disk driva.

Ferox Microsystems
1201 N. Ft. Myer Dr.
Arlington, VA 22209
(703) 841-0800

Ascom

827 An interactive telecommunications program for time-sharing and data transfer. Text and program files transfer through protocols that synchronize fila transfer. The "conversation mode" transmits and saves data and controls remote computers. Batch processing permits command files that eliminate repetitive sign-on and security procedures. *Ascom* also includes commands for displaying directories and files on the host computer. *(List Price: $175)*

Requires: 48K, one disk drive, asynchronous communications adapter, CP/M-86 or DOS.

Dynamic Microprocessor Assoc.
545 Fifth Ave.
New York, NY 10017
(212) 687-7115

PCModem

828 A communications program that links tha IBM PC with tha D.C. Hayes Smartmodem. All changes are initiated with a function key, and a main menu displays function key definitions. Features include automatic dialing from a manu of phona numbers and tha ability to send and receive ASCII files. Tha program provides the ability to print all text as it comes in over the telecommunications line. *(List Price: $49.95 including ori operations manual)*

Requires: 64K, 80-column monitor, ona disk drive, IBM communications adapter (or equivalent), D.C. Hayes Smartmodem.

System Software Services
1765 Roleigh Lri.
Hoffman Estates, IL 60195

Dataease

829 A data base system for the business community. Users can define data-entry forms through a menu-driven forms editor. Full cursor and editing features are provided. Individual records can be recalled by partial specification of any field. The system provides password protection with three levels of security.*(List Price: $795)*

Requires: 128K, two double-sided disk drives, printer.

Softwore Solutions, Inc.
57C Wedgewood Rd.
Strotford, CT 06497
(203) 377-3268

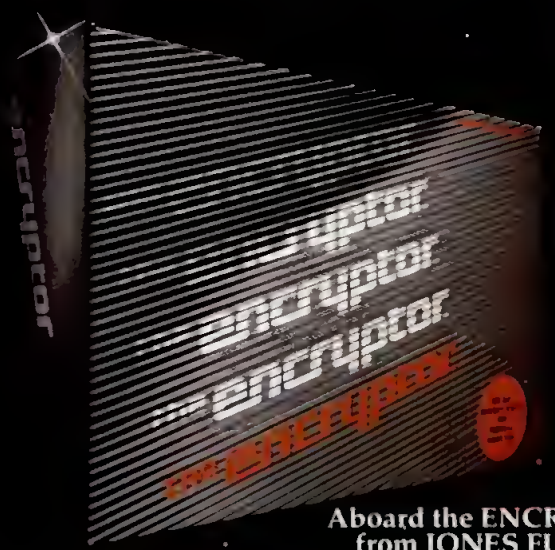
Interm

830 A communications program that turns the IBM PC into an intelligent terminal. Features include compatibility with VT52, H19, and Z19; uploading and downloading of files; ranaming, deleting, and copying files; fully programmable protocol with stop bits, parity data bits, and full/half duplex; and 110, 300, 600, 1200, 4800, or 9600 baud operation.*(List Price: $200; manual only, $20)*

Requires: 64K, one disk drive, asynchronous communications adapter, 80-columri monitor.

Automoted Office Systems
602 Lookout Dr. #213
Richordson, TX 75080
(214) 669-9966

Microcomputer Data Security Has Arrived!



Aboard the ENCRYPTOR from JONES FUTUREX

The **ENCRYPTOR**. . .the high-speed data encryption/decryption device, designed especially for use with the APPLE®, the IBM® Personal Computer® and S-100 microcomputers. A complete hardware/software package, individually tested against National Bureau of Standards methods, the **ENCRYPTOR** puts the strength of DES (the Data Encryption Standard) at the disposal of business/personal computer users: Files secured (whether stored or for transmission) in a matter of microseconds. Any sensitive data can be quickly and economically protected to a degree never before available on the microcomputer level. The **ENCRYPTOR:** Easy to afford, easy to install, easy to use.

Manufactured and distributed by **JONES FUTUREX, Inc.** of Fair Oaks, California, innovators in the design of digital and video security systems and devices.

For Further information, Contact
JONES FUTUREX, INC.
9700 Fair Oaks, Blvd., Suite G, Fair Oaks, CA 95628 (916) 966 6836

COMMUNICATIONS

E-Mail

831 An electronic mail facility that provides users with the flexibility to customize the program for different uses, from interoffice mail to bulletin boards. Program features include user programmability where versatile functions are provided for most applications, but the program has also been designed for user-added modules to increase functionality and flexibility. Other features include user-defined passwords for selected caller access, a scheduler function for unattended transfar between two systems, user-defined verbiage to customize to the user's application, soft-key support; log files to record activity; support of on-line printer and disk storage; full documentation to insure compatibility of modifications and additions. Users need some knowledge of BASIC to use the program. *(List Price: $250)*

Requires: 64K, two disk drives, serial and printer interface, D.C. Hayes Smartmodem.

Jones Engineering Associotes, Inc.
P.O. Box 26134
Chorlotte, NC 28213
(704) 455-9616

PC-Talk

832 A full-featured communications program that permits simultaneous printout, uploading, and downloading of disk files, a dialing directory with auto-dialing, programmable input keys, user-definabla communications protocol, elapsed time display, and selective stripping of characters. It operates at speeds up to 1200 baud, has XON/XOFF support, on-screen help commands, and self-printing completa documentation. Users may obtain a free copy of the program by sending a blank formatted disk in a postage-paid return mailer to the publisher. Or send a $25 advance order. *(List Price: $25 suggested contribution)*

Requires: 64K, one disk drive, asynchronous communications adapter.

FREEWARE
The Heodlonds Press, Inc.
P.O. Box 862
Tiburon, CA 94920

Asynchronous Communications Support Package

833 A program used with tha Asynchronous Communications Adapter that enables tha user to communicate with other devices without the need for programming. Tha PC can be used as an asynchronous (start/stop) terminal to exchange programs and data files with a host system. Common settings such es parity, stop bits, and baud rates are specified interactively at program initiation. Programs can be sent from the PC to a host or received by the PC from a host. *(List Price: $40, IBM Product Center prices)*

Requires: Asynchronous communications adapter, 16K; communications programs written in BASIC require one disk drive, 32K. (Users are responsible for obtaining necessary modems, cabla, and communications options for attaching their system to peripheral devices).

IBM Corporation
System Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4000 Illinois
447-0890 Alasko, Hawaii

Software for the IBM Personal Computer...from SuperSoft

C compiler

A professional quality compiler suitable for ny programming task. Supports most Unix ersion 7 "C" features. Produces highly otimized executable code. $500.00.

Star-Edit

Very powerful screen oriented text editor. ext is formatted exactly as it appears on the reen. Resembles the "EMACS" editor. uitable for any text processing task from rogram writing to word processing. $225.00.

ScratchPad

The Ultimate Spreadsheet. The finest ectronic worksheet available which includes e following state-of-the-art advancements: very cell on the spreadsheet can be used. onsolidate numerous spreadsheets. Screen ay be split as often as you wish. More. $295.00.

Disk-Edit

Provides ALL the raw information on your isk in both HEX and ASCII. You can scroll rough that information and alter it with a set f text editing commands. Extremely powerful isk utility. $100.00.

BASIC compiler

A superset of standard BASIC. Accepts the ost popular syntax. Supports many extensions the language. Long variable names are llowed and line numbers are not required. Few hanges needed to compile programs written or the IBM BASIC interpreter. $500.00.

FORTRAN

Full WATFIV FORTRAN IV which meets and exceeds the ANSI 1966 standard. Supports many advanced features including variable character strings and recursive subroutines with static variables and complex variable types. $425.00.

Investment TaxPac

Maintains a complete catalog of information on your investments and tax records. Simplifies investment analysis. $200.00.

Diagnostics II

A complete set of diagnostics routines allowing you to check every component of your hardware to pinpoint any malfunctions that may occur. $125.00.

Optimizer

A business problem solver which uses the linear programming technique to solve complex numeric problems. Optimal solutions are provided, and a "what if" analysis is available. $200.00.

All products available for both IBM PC DOS and CP/M-86.

Available from fine dealers everywhere or directly from SuperSoft.

Japanese distribution:
ASR Corporation International
3-23-8, Nishi-Shimbashi, Minato-Ku,
Tokyo 105, Japan
Tel. (03) 437-5371
Telex. 0242-2723

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FIRST IN SOFTWARE TECHNOLOGY P.O Box 1628 Champaign, IL 61820 (217) 359-2112

Now, for the IBM: The FinalWord!

The only word processing software package you'll ever need

How could anyone call their word processor The FinalWord? Take the best features of the most popular word processors, combine them and add a few more in one text editor/formatter and you'd be off to a good start. Then, write the program in C to allow user customization and make it capable of supporting any printer on the market and you'd be ahead of everybody else. If you went one step further and made your word processor transportable from one terminal to another you'd have—The FinalWord.

Supports multiple printers: The FinalWord allows you to produce high-speed draft copies on one printer, and letter-quality on another. It also means you'll never need another version just because you bought a new printer.

User-installable on different hardware: With The FinalWord you can upgrade your system and still have a familiar screen display. And since we've written The FinalWord in C, new versions are available almost as soon as new computers.

Features that put you in control: Look at what you get with The FinalWord: automatic generation of Table of Contents, Index, footnoting and chapter/section numbering; enhanced command sets (delete/move a letter, word, sentence, paragraph, page); multiple buffers and windows, deletion recovery, true proportional spacing and more. And because we wrote The FinalWord to be easily reconfigured for different systems, our price can be lower.

Features	The FinalWord™	WordStar™
Full-Screen Editing	Yes	Yes
Directory Access while Editing	Yes	Yes
Simultaneous Printing while Editing	Yes	Yes
External Commands while Editing	Yes	Yes
Video Highlighting	Yes	Yes
Automatic Footnotes	Yes	No
User-Defined Commands	Yes	No
Multiple File Editing	Yes	No
Deletion Recovery	Yes	No
Supports Multiple Printers	Yes	No
Crash Recovery	Yes	No
Dynamic Include Files	Yes	No
Suggested Retail Price	**$300**	**$495**

The FinalWord for the IBM personal computer requires 64K, IBM DOS, and a printer or communications adapter; otherwise, The FinalWord requires a 56K CP/M system and any video terminal with cursor positioning character sequences. It is presently available in 8" standard format for the TRS-80 Model II, Vector Graphics and Altos Systems. There are compatible versions for the HP-125, Xerox 820, Cromemco, Micropolis and Dynabyte Systems, and there are 5¼" versions for the Heath/Zenith Z-89, Northstar, Apple and Superbrain. **Coming Soon: The FinalWord for the DEC Personal Computer.**

The FinalWord is available through leading retailers, Westico, and Discount Software, or directly from:

Mark of the Unicorn, Inc.
PO BOX 423
Arlington, Massachusetts 02174
(617) 489-1387

Dealer and OEM inquiries invited.

TM The FinalWord is a trademark of Mark of the Unicorn. WordStar is a trademark of MicroPro International

Mark of the Unicorn

COMMUNICATIONS

Communications Package

834 A menu-driven program that makes it easy to set up a communications channel and send and receive files. It provides on-screen status information and can send predefined messages at fixed times. Included is a translation table for customization. Supported baud rates are 75, 110, 300, 600, 1200, 1800, 2400, 4800, and 9600. *(List Price: $40)*
Requires: 48K, one disk drive, asynchronous communications adapter.

Personal Computer Products
1400 Coleman Ave., Ste. C-18
Santa Cloro, CA 95050
(408) 988-0164

Lync Data Communications

835 A data communications program with two modes of operation: Lync and Term. In Lync moda local or remota directories can be displayed, and user-defined routines can be executed. The program allows the user to enter Send, Fetch, Dump, Load, Term, and Hexdump modes. In Term mode an input file can be opened, and data can be written to the file. It uses full or half duplex, and axecutes user routines. Lync mode can be entered. *(List Price: $125)*
Requires: 48K, one disk drive, modem, asynchronous communications adapter.

Internotional Softwore Alliance
1835 Mission Ridge Rd.
Santa Barbaro, CA 93103
(805) 966-3077

E/Lync Data Communications

836 A data communications program that operates in two modes: Lync and Term. In Lync mode a message typed on either terminal is viewed on both terminals; any file can be sent to another system; and the user can axit tha program or switch to Term mode. In Term mode tha microcomputar becomes a data communications terminal allowing hook up to such files from The Source, etc. The user can exit the program or switch to Lync mode while in Term mode. *(List Price: $30)*
Requires: 48K, one disk driva, asynchronous communications adapter, modem.

International Software Alliance
1835 Mission Ridge Rd.
Santa Barbaro, CA 93103
(805) 966-3077

Crosstalk 2.0

837 Communications software that allows DOS-based microcomputers to access data stored on almost any ASCII dial-up computer system regardless of disk format incompatibilities. Designed for micro users who need access to large time-sharing systems, who subscribe to information utilities such as The Source or CompuServe, or who need to exchange data or program files among networked micro users.

Crosstalk allows CP/M systems to emulate a "very smart" tarminal by automatically dialing a system, establishing access through passwords, and loan in data at full modem speed for off-line aditing.*(List Price: $195)*
Requires: 64K, ona disk drive, modem, serial interface.

Microstuf, Inc.
1900 Leland Dr. #12
Morietta, GA 30067
(404) 952-0267

Micro Link

838 A communications program that exchanges files and conducts keyboard conversations either over tha telephone or via direct cabling with other micros or mainframe computers. Features include the ability to send and receive text, machine language programs, and data files without conversion. Other software may be used by the computer at the other end of the communications link. *(List Price: $89)*
Requires: 32K, one disk driva, CP/M-86, serial interface, modem.

Digitol Morketing
2363 Blvd. Circle
Walnut Creek, CA 94596
(415) 938-2880

Micro/Terminal

839 A program that allows users to exchange data with mainframes, minis, and data bases such as The Source, Dow Jones, or CompuServe. It features a built-in text editor, facility for printing data as it is received, and the ability to create automatic sequences that initiate exchanges with other systams. Users can create a directory that automatically provides Micro/Terminal with correct file names, telephone number, baud rate, flow control, duplex mode, and data format for frequantly called services or systems. It can also construct automatic log-on and information ratriaval procedures, so users need not intarvane to receive daily or regular information transfers.*(List Price: $100)*
Requires: 64K, two disk drives, serial interface.

Microcom
1400A Providence Hwy.
Norwood, MA 02062
(617) 762-9310

R/Net (Relational Network)

840 A software interface that connects the IBM PC directly or remotely to minicomputers supporting ADDS terminals. It supports ADDS cursor control and allows data sent to the PC to be stored on its own disk storage. Data from a relational data base may be retrieved and stored on the PC and operated on by the microcomputer without further impact on the data base machine's limited resources. It allows the PC to perform word processing and VisiCalc business plan projections using data from the data base. *(List Price: $200 including floppy disk, documentotion, conversion table)*
Requires: 48K, one disk drive, asynchronous communications adapter.

Cosmos Inc.
10626 148th Ave. SE
Renton, WA 98056
(206) 226-9362

EMU-TEK Emulation Software

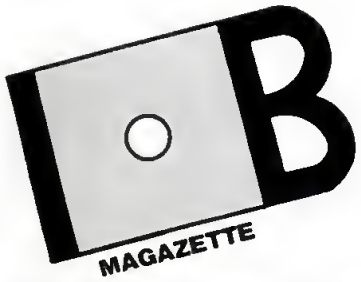
841 A software package that provides emulation of some or all features of the Tektronix 4006, 4010, 4012, 4014, 4015, or 4016 graphic CRTs. Graphic CRTs are useful in time-sharing or dedicated environments for all types of scientific and enginaering work. The package provides light pen and joystick support. *(List Price: Not available)*
Requires: 64K, one disk drive, asynchronous communications adapter.

FTG Data Systems
10801 Dale, Ste. M-2
P.O. Box 615
Stonton, CA 90680
(714) 995-3900

Intelliterm

842 A full-capability communications program that features separately scrolling windows. It allows the user to set up a bulletin board with optional CBBS module.*(List Price: $150)*
Requires: 64K, one disk drive, (printer optional).

MicroCorp
913 Walnut St.
P.O. Box Q
Philadelphio, PA 19107
(215) 627-7997
Source: TCM033
CompuServe: *70335,1027*



New Form of Two-Way Communication

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Magazine on Diskette

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National User's Group

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Program Exchange

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Medium for Free Exchange of Information Between PC Users

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Fun

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City

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COMMUNICATIONS

TE100 (UT100 Terminal Emulator)

843 A software packaga that allows tha PC to function as a Digital Equipment Corporation (DEC) VT100, VT101, or VT102 terminal. The TE100 implements almost all DEC features including setup mode, charactar attributes, line and character insert and delete, and modification of terminal charactaristics. *(List Price: $125)*

Requires: 48K, one disk driva, monitor, serial interface, modem.

Persoft, fnc.
2186 U.S. Highway 51
Stoughton, WI 53589
(608) 233-1000

VideoLink 88

844 A menu-drivan communications package that turns the PC into an intelligent terminal capable of acquiring and recording information from other computers. Tima and money saving features for users of The Source, Tel-Net, or Time Net include selective recording of information to disk or printar for future review and editing. *(List Price: $59.95)*

Requires: 64K, seriel intarface, modam.

Windmill Softwore, Inc.
1058 Joon Dr.
Burlington, Ontorio
Conodo L7T 3H2
(416) 632-6279

R/NET, R/UPLOAD

845 A femily of software products designed to transfar data stored on a centralized date base machine to e PC work station. *R/NET* lets the PC serve as an intelligant work station, allowing minicomputar data base management systems to "talk" to the PC. Tha program recaives data sent from the data base machine and stores it on tha PC's disk, where it is processed without using any of tha minicomputer's limited resources.

R/UPLOAD works with *R/NET* to provide the ability to move files from the PC to the minicomputer data base management system. Data is collected at the work station and sent to the minicomputer.

In both programs the baud rate is controlled by a function switch, which mey be set at rates ranging from 300 to 9600. Both programs will address up to 128K and can utilize additional floppy or hard disk storage. *(List Price: R/NET $200, R/UPLOAD $75.)*

Requires: 32K, one disk drive, serial interfaca, modam.

Cosmos, fnc.
10626 148th Ave. SE
Renton, WA 98056
(206) 226-9362

GRAPHICS

HP7470 Plotter Demo

846 Four demonstration programs for an HP7470 or HP7225 plottar that can be modified to serva users' particular needs and data. The *Birthday Plot* creates spiral plots from random points. The *12-Month Trend* program plots a 12-month moving average for two sets of data. The X-axis is labeled with months and tha Y-axis is labeled in thousands of dollars. Labels end date values can be modified to suit users' needs. *Phone Chart* plots a ledger sheet for entaring names, addresses, and phone numbers. *Display Slides* can be used to create posters or presentation slides. Users design the placement of text on tha video display. The plotter prints the poster or slide. *(List Price: $24.95)*

Requires: 48K, one disk drive, HP7470 or HP7225 plottar.

Ensign Softwore
2312 N. Cole Rd., Ste. E
Boise, ID 83704
(208) 378-8086

I-Plot

847 A plotting program that eccepts data from the keyboard or a deta file created by anothar program. After data is entered, up to six data sets can be plotted in line, scatter, bar, or pie charts. It also overleys combinations of presentations. Completed plots may be saved or dumped to e printer. The program is menu-driven and data can be corrected by reentering on screen. *(List Price: $250)*

Requires: 128K, one disk drive, color/graphics adapter.

Monagement Solutions, Inc.
17660 Millbrook Dr.
Chogrin Falls, OH 44022
(216) 543-9263

Presentation Graphics

848 A packaga that ganerates end stores complex business information in graphic form such as pia charts, bar charts, and graphs. The package has e medium- and high-resolution color display genarator, software, and a choica of video-graphic recordars for 35mm slides, 8x10 overheads, and other common visual formats. Satellite software packages and leases are also available. *(List Price: $22,500)*

Requires: 128K, ona disk driva, serial interface, color monitor.

CENTEC Monagement Briefing Graphics
11260 Roger Bacon Dr.
Reston, VA 22090-5281
(703) 471-6300

PCcrayon

849 A graphics design aid that enables the user to create and save color/graphics symbols and add motion and music to the creations. It comes with predefined symbols and fonts. *(List Price: $44.95, demonstrotion disk $10)*

Requires: 64K, color/graphics adapter, (other requirements not available).

PGsoftwore
4155 Glevelond Ave.
Son Diego, CA 92103

VisiTrend/Plot

850 Graphics software that allows users to take data entered through *VisiCalc* and create charts and graphs along with statistical reports including linear regression, standard deviation, mean, median, and the like. Displays may be saved on disk for later use in presentations. Graphs may be printed with the IBM or Epson with Graftrax and several other graphics printers. *VisiTrend/Plot* is part of "VisiSeries," a set of integrated programs by VisiCorp. *(List Price: $300)*

Requires: 64K, one disk driva, color/graphics adapter.

VisiGorp
2895 Zanker Rd.
Son Jose, CA 95134
(408) 946-9000

Typo

851 A program that creates business graphics for group presentation. It enables users to customize any standard text with specific dates and information. Users compose ideas on the screen, experiment with different word arrangements, correct arrors, and select from a variaty of typefaces for final printout with a graphics-equipped dot matrix printer. Printed pages can be used as masters for ovarhead transparencies. *(List Price: $75)*

Requires: 64K, one disk drive, IBM or Epson printer with Graftrax.

Rodio Technology
8 N. Main St. #111
West Hartford, GT 06107
(203) 232-9974

Project Management Graphics

852 A program that generates multicolor outputs on H.P. multicolor plotters. Critical path networks required in project management are calculated, plotted on CRT, edited, stored, and graphed on the X-Y plotter. Access is via the PC's ten user function keys. *(List Price: $295)*

Requires: 64K, two disk drives, H.P. multicolor plotter.

Polymer Projections, Inc.
1407 Bethlehem Pike
P.O. Box 312
Flourtown, PA 19031
(215) 836-7100

Monochrome Slide Editor and Organizer

853 An aid in developing high-quality slide presentations for the monochrome display. Text and graphics may be mixed on the screen with a variaty of attributes supported for all charactars. The Organizer allows access to slides using Page Down end Paga Up keys for paging backward and forward through slides. *(List Price: $75)*

Requires: 48K, one disk drive.

Digitol Learning Systems, Inc.
168 E. Main St.
Denville, NJ 07834
(201) 627-7917

Chart Pro

854 A program that produces graphics on the screen (monochrome or color) and with the Epson or IBM printer. It produces charts, bar graphs, and linear data from information the user anters directly or through *VisiCalc* files. *(List Price: $75)*

Requires: 64K, one disk drive, Epson or IBM printer, (*VisiCalc* optional).

Micro Control Systems
431 Vinyord Point Rd.
Guilford, CT 06437
(203) 643-4897

Print-Graf, Micro-Graf

855 Two programs designed to work individually or together to print out medium- or high-resolution graphics screens on an Epson or IBM printer and to create charts and graphs. *Print-Graf* prints the graphics scraen as a user wents it. For a full-size page the program can orient a 8.6 x 9.0 picture sideways on a page and locate it where the user needs it. If a user needs to put graphics on a page with typing, the program can center a 3x5 printout upright on the page. Reverse or normal printout is also available.

Micro-Grof creates charts end graphs of data autometically. Users type in deta, select the X-Y scales, input titles for the axes and the chart, and select a line, ber graph, or lineer regression line. The program allows users to change the scales, titles, or formats, and try different combinations of data. *(List Price: Print-Graf $44.50 including monual, Print-Graf ond Micro-Graf $79.50, both programs with Epson Groftrox-Plus $149.50)*

Requires: 48K, two disk drives, color/graphics adapter, Epson Graftrax with either Epson or IBM printer.

Micro-Z Electronic Systems
P.O. Box 2426
Rolling Hills, CA 90274
(213) 377-1640

Slide Pro

856 A menu-driven program that uses tha function keys as its primery input medium. It permits Intaractive genaration of charts suitable for use in making overhead projector slides. Charts ara craated using a variety of prestored shapes with words and color added interactively. Differant colors produce diffarant shadings on the hard copy unit. It produces black and white charts on normal printer paper. *(List Price: $49.50)*

Requires: 64K, color/graphics adapter, Epson or IBM printar.

Micro Control Systems, Inc.
230 Hartford Turnpike
Vernon, CT 06066

GraphPower

857 A menu-driven package that creates business graphics on Hewlett-Packard and Houston Instrument pen plotters. It creates full-color pie charts, bar and stacked graphs, lina graphs, text, and reports on papar or transparencies ready for business presentations. GrophPower may be used alone or by accessing DSS/F data files. *(List Price: $299)*

Requires: 64K, two disk drives.

Ferox Microsystems, Inc.
1701 N. Ft. Myer Dr. #611
Arlington, VA 22209
(703) 841-0800

The Graphics Generator

858 A graphics program that creates, edits, formats, saves, and recalls graphs using single-keystroka commands. It allows users to creata bar charts, pie charts, line graphs, and function graphs es color or monochrome displays. Editing features include adding or deleting data items, functions, or data sets. Graphs are automatically modified to reflect changes in data. Capabilities also include superimposing two graphs, merging bar charts, and plotting up to ten curves on one graph. *(List Price: $200)*

Requires: 64K, one disk driva, color/graphics adapter, (IBM printer with Graftrax-80, or Epson printar with Graftrax-80 optional).

Robert J. Brody
Bawie, MD 20715
(800) 638-0220, (301) 262-6300

Slide Pro

859 A graphics program that produces copy that can be thermofaxed for overhead projection slides. The user moves tha cursor around, drawing flow charts and block diagrams. *(List Price: $75)*

Requires: 64K, one disk drive, color/graphics adapter, printer.

Micro Control Systems
431 Vineyord Point Rd.
Guilford, CT 06437
(203) 643-4897

GRAPHICS

Glyphix

860 A graphics sketch-pad program that assists in the development of images and diagrams on the IBM color/graphics screen. The program, written in Advanced BASIC, is not list-protected, but is code structured and commanted so users can modify the code to serve their needs.

The program offers users full and aasy access to all BASICA graphics features. A single-pixel flashing cursor is steered about the screen with the eight outer keys of the numeric keypad. The program can draw vertically, horizontally, and to any 45-dagree angle for rapid isometric sketches. Lines can be drawn between any two points on the screen using the RAY command.

Used with the manufacturer's Frieze graphics utility program, graphic images created with Clyphix can be saved to disk or dumped to a printer with the PrtSc key.
(List Price: $24.95)
Requires: 48K, one disk drive.

Storside Engineering
P.O. Box 18306
Rochester, NY 14618
(716) 461-1027

PC-Graf

861 A business graphics package with bar graphs, histograms, scatter (dot) graphs, line graphs, and hi-lo (stock) charts. The programs use data created with *VisiCalc* and similar programs. Graphs and charts are automatically displayed on the screan using the PC's high-resolution graphics capability. Full documentation is included. *(List Price: $125)*
Requires: 48K, color/graphics adapter, (other requirements not available).

von Leivendyke Enterprises
Silvermine Ave.
Norwolk, CT 06850
(203) 846-4973
Telex: 643-103

Pixprint

862 A graphics package that prints any graphics picture, medium- or high-resolution, black and white or color. Colors are translated into shades of gray. It prints graphics even without a graphics video board from a picture stored on diskette. It prints in four different sizes, from playing card format to full-blown poster. Documentation includes BASIC programs to drive it and tailor it to special needs. *(List Price: $49.50 USA, $57 Conodo)*
Requires: 48K, one disk drive, Epson or IBM printer with Graftrax.

Microtoure Inc.
200 Rideau Terrace #706
Ottawo, Ontorio
Conodo K1M 0Z3
(613) 745-6661

Chartman

863 A business graphics program that allows users to present data in two- or three-dimensional graphics. The program is menu driven, uses single function keys, and converts numerical data into over 15 types of graphics charts. The charts can be printed out, produced on Hewlett-Packard plotters, transferred onto transparencies (to be displayed on overhead projectors), or stored on disk. Chortmon interchanges data with *VisiCalc*, plotting information thet has already bean analyzed by that program. *(List Price: $380)*
Requires: 64K, one disk drive, color/graphics adapter.

Crophic Softwore, Inc.
P.O. Box 367
Kenmore Stotion
Boston, *MA 02215*
(617) 491-2434

Elate

864 An interactive diagramming template for system designers, allowing different diagrams to be craated, manipulated, and printed in a real-time mode. *Elote* combines a light pen with a keyboard; the light pen selects and manipulates a group of standard design symbols displayed on the screan's margin, and the keyboard allows text entry and diagram paging. *(List Price: $300)*
Requires: 64K, RGB monitor, color/graphics adapter, printer, light pen.

Crophicol Interoctions
2927 Shonnon Ct.
Sonto Clora, CA 95051
(408) 249-7780

Video Etch

865 A drawing program that allows users to create and save high-resolution graphic line etchings. Video Etch has applications in engineering, drefting, education, and graphics program development. Stored etchings may ba called from other BASIC programs. *(List Price: $49.95)*
Requires: 64K, ona disk driva, color/graphics adapter.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

Chart Pro

866 Business graphics software designed to produce bar and dot charts. Data is input from the keyboard in response to menu prompts. Data can also be displayed in a variety of formats. *(List Price: $49.50)*
Requires: 64K, (Epson or IBM printer optional). Other requirements not available.

Micro Control Systems, Inc.
230 Hortford Turnpike
Vernon, CT 06066

NCAPT Software System

867 A sophisticated language for numerical control programming, including point, line, circle, tabulated cylinder, vector and matrix definitions, conditional branching and looping logic, and cutter compensation. This is an application module of the CDX Craphics System. *(List Price: $5,500 including documentotion)*
Requires: 1MB hard disk storaga, Baby Blue.

FTC Dato Systems
10801 Dole #M-2
P.O. Box 615
Stonton, *CA 90680*
(714) 995-3900

Bar Graph

868 Software that displays all typed-in data in bar graph form, allowing users to visualize numerical deta graphically. *(List Price: $25)*
Requires: 48K, one disk drive, (printer optional).

Metomorphics, Inc.
154 Montgomery Ave.
Bolo Cynwyd, *PA 19004*
(215) 668-9000

Pixbuilder

869 A graphics package that provides a graphics editor, a picture interpretar, and a communications packaga that allows pictures to be sent in a compact, universal format through a modem or any computer to computer line. It is written in assembly language to increase the speed in image processing and display. It fully supports light pen handling. The editor supports the use of both monochrome and graphics display (full menus and on-line documentation on tha monochrome). *(List Price: $249.95 USA, $299.95 Conodo)*
Requires: 48K, one disk drive, Epson or IBM printer with Graftrax.

Microtoure Inc.
200 Rideou Terrace #706
Ottawo, Ontorio
Conodo *K1M 0Z3*
(613) 745-6661

Mirrorgraphics Business Systems

870 A software package that provides a graphics facility for a variety of business applications. It creates high-resolution graphs and charts from data in e unified data base. *(List Price: $34.95)*
Requires: 64K, one disk drive.

Mirror Imoges Softwore
1223 Peoples Ave.
Troy, NY 12180
(518) 274-2335

Pssssttt...

(Jingle Bells, Jingle Bells, Jingle All The...)

We're really not rushing the season. We wouldn't even mention it if we didn't think you'd want to know.

The **Strictly Soft Ware** Holiday Catalogs (Apple & IBM) are going to be ready early this fall. More software than ever. Same great prices. And with a customer service and technical support program that's so good that...well, let's just say someone at the North Pole is on our mailing list.

If you're already on the **Strictly Soft Ware** list, you'll automatically receive our Holiday Catalog. If you're not on the list, call us (toll-free) at 1-800-848-5263. Bulk mailing starts Oct. 1.

Don't be left out in the cold by not ordering the free **Strictly Soft Ware** Holiday Catalog. It may be the nicest present you get this year.

IBM SPECIALS

Write-On	**$99.99**	**Visicalc**	**$189.99**
Word Star	**$239.99**	**Visidex**	**$189.99**
Volkswriter	**$159.99**	**Desk Top Plan**	**$189.99**

Above Specials In Effect Until Oct. 1.

Holiday Gift Idea #1

*The **Strictly Soft Ware** Subscription Plan. Prepayment allows the account to be drawn upon for whatever you want, whenever you want. When we send the package, we'll provide a balance statement as well. Here's a gift that can last all year long.*

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We take Master Card or VISA (include card # and expiration date). Ohio residents add 5.5% tax. Include $2.00 for postage. 3% discount if check accompanies order.

Send for free catalog. Prices subject to change. Hrs.: 9-9 weekdays; 9-6 Sat.

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Granville, Ohio 43023
order by phone **800-848-5253**
in Ohio **614-587-2938**

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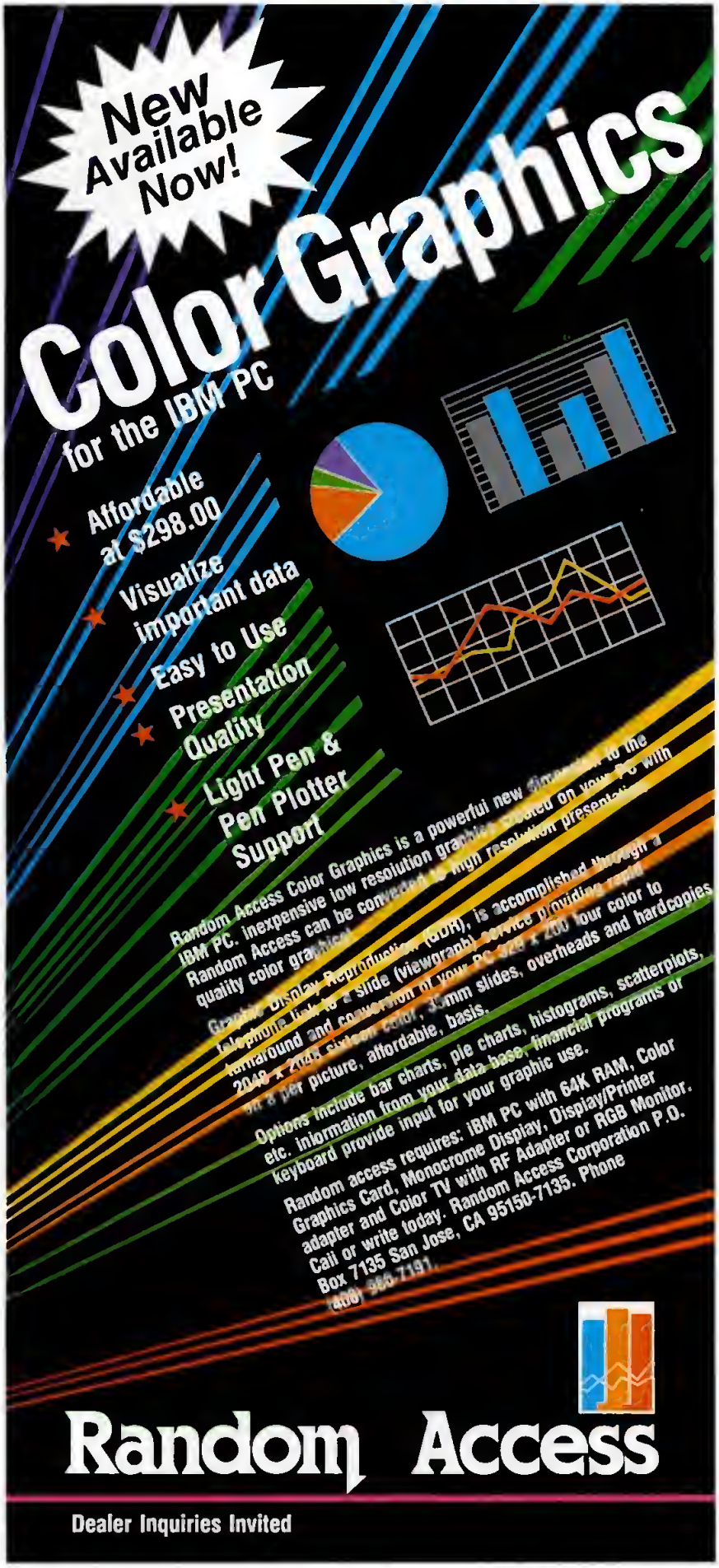

GRAPHICS

Plotrax

871 A software product for engineering, scientific, and business applications. It plots X-Y coordinate from disk files onto tha screen with high-resolution graphics and includes a statistical routine to perform linear or polynomial regression of the data. The user can switch between the plotter menu and the actual screen plot until satisfied with the screen imege. The option of dumping the graphics screen to the printer is also included. *(List Price: $97)*

Requires: 64K, one disk drive, color/graphic adaptar, Epson MX-100 printer.

Omicron Softwore
Engineering-Science
57 Executive Park South #590
Atlanto, GA 30329
(404) 325-0770

Transplot

872 Software for engineering, scientific, and business applications that provides capability for dumping a graphics screen image to en Epso MX-100 printer, typically in less than 3 minutes. *(List Price: $39)*

Requires: 64K, one disk drive, color/graphic adapter, Epson MX-100printer.

Omicron Software
Engineering-Science
57 Executive Park South #590
Atlanta, GA 30329
(404) 325-0770

GDX Interactive Graphics System

873 A collection of programs and modules for the creation, manipulation, and display of geometric data i two and three dimensions. Individual module are specialized for drafting, printed circuit layout, and numerical control applications. Subroutine sets are availabla separately for graphic display processing, editing, and I/O interface. A path langth optimization module i also available separately.

Support is available for plotters, digitizers light pens, paper tape, and other devices. The data base structure uses 32-bit integers for high resolution, minimal disk requirements, and fast processing. The system is customized to the user's needs. *(List Price: Not available.)*

Requires: Not available.

FTG Dato Systems
10801 Dale #M-2
P.O. Box 615
Stanton, CA 90680
(714) 995-3900

RANSFORM YOUR IBM® TOTALLY
RAPHICS + BUFFERING + TERMINAL

Computer—Printer Output Buffering

Buffer sizes software selectable 16K, 32K, 48K, 64K
Uses any standard memory expansion boards
Buffer size reselection for different sized output jobs, at keyboard level
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Dot Matrix Graphics Hard Copy Reproduction

Full Color or B/W tones
Uses any standard memory expansion boards
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4 dot scale sizes for 4 different blow-up sizes
Whole graphics screen, or any subsection can be reproduced
Picture rotation, across or along length of page
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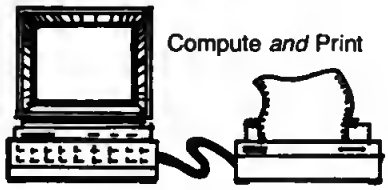
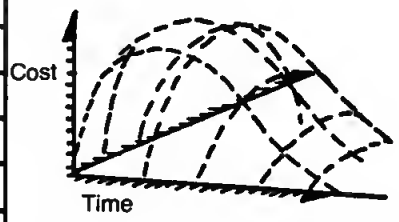
Dot patterns and tones are user redefinable
Inversion of color/BW for any graphic mode
Colors on Prism 132/80 can be swapped and mixed as desired
Compatible with:
Epson MX80-80FT-100
NEC 8023
C-ITOH PROWRITER I/II
Okidata 82, 83 with graphics
IDS Prism 132/80, with or without color options

MICROCOMPUTER
Simultaneous



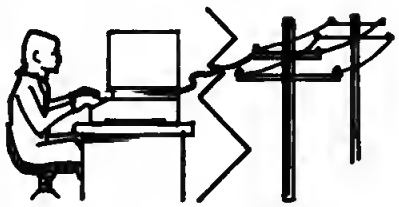
Printer Output Buffering

BUSINESS



Dot Graphic Reproduction

INDUSTRIES



Terminal Emulator

Recommended Retail

$85.00

Less than $29 per function!

Terminal Emulator Data Aquisition

- RS-232 direct connect or modem connect to remote computer
- Full communications, data logging, printing, viewing and storage
- Software permitting intelligent graphics terminal emulation also will be available
- All functions settable from keyboard

This unique device meets the standard, beats the standard and will be the standard for IBM users and software, worldwide.

The NAME of this *indispensable* device?

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1019 8th Street
Golden, CO 80401

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MINISTRATIVE OFFICES: 1019 8TH STREET, GOLDEN, COLORADO 80401 (U.S.A.)
LEPHONE: (303) 279-8438

TWX: 910-934-0191

Educational, Personal, and Entertainment Software

The fourth section of the PC Product Guide consists of three groups: Educational, Personal, and Entertainment Software. A few programs with other applications ara dascribed at the end of the section. The Educational Software has two general applications. The first kind is tutorial software that teaches skills and concepts. The second group comprises professional programs for developing courses or for school or class administration.

The tutorial programs teach such things as the history of computers, how to use computer hardwara, and how to program in BASIC. Other programs teach math, vocabulary, spelling, and typing skills. Professional programs include software for teachers who want to develop computer-assisted instruction (CAI) and teachers and school administrators who need to kaep track of test grades, course averages, and student attendance.

When choosing tutorial software, check the age group and educational level for which the program is designed, and make sure it teaches skills and concepts that are right for the students. Also make sure that your computer has all the hardware required by the program so you can take advantage of features such as graphics, color, or sound. Try to see a demonstration of the program, and make sure that clear instructions are provided for everyone who uses the program, either on the screen or in the documentation. Finally, check that answers to test and quiz questions are provided, again, eithar on the screan or in the documentation.

The second group, Personal Software, comprises programs for personal financas and home use. The finance programs are designed to help keep budgets, prepare taxes, maintain telephone diractories, and managa cash, checkbook, and credit cards. Many of these programs can also be used in small businesses. Home use software includes cookbook and diet programs, and even a data base of names for children. One set of programs in this group covers solar energy. Tha programs carry out tasks such as calculating solar energy and evaluating solar hot water heating systems.

When selecting personal and home use software, you are the person who knows what you need. To be practical, look for programs that carry out tasks you nead to have dona. You may also choose programs simply because you want to learn about a particular application. As with all software, make sura the program suits the requirements of your hardware and that it makes good use of all the features.

A third group in the Educational, Personal, and Entertainment section is Entertainment Software for sports and games. Sports software keeps track of scores and other statistics. Some of the sports included in the descriptions are golf, bowling, and gymnastics.

Games software includes a variety of fantasy games, space games, mystery games, and card games such as bridge and blackjack. Also included are question and answer games in which the program asks you increasingly more difficult questions, and simulation games about topics such as operating a business.

The games in this section make good use of PC hardwara. Many of them feature high-resolution graphics, animation, color, and sound effects. In fact, playing games is a good way to see some of the PC faatures in action.

When choosing entertainmant software, consider your PC system and the sports or game program requirements. Beyond that, we can't say much mora than have fun!

Software Requirements

FOR ALL SOFTWARE PRODUCTS we have listed memory, operating system, language, disk drive, interface, monitor, and printer requirements where available from manufacturers. Software requires DOS and BASIC except where other operating systems or languages are listed. Check with manufacturers and dealers before making a purchase to assure that software is compatible with your IBM PC.

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EDUCATIONAL

The Data Reporter

874 A data basa managament system that features machine language searches and sorts, soundex searches, calculated fields, batch commands, password protection, user-specified fields, unlimited record lengths, and several printing options. *(List Price: $250)*

Requires: 64K, one disk driva, printer.

Synergistic Softwore
830 N. Riverside Dr.
Renton, WA 98055
(206) 226-3216

The Keyboard, T.E.L., BBASIC, ABASIC

875 The *Keyboord* is an illustrated program that teaches keyboard functions through step by step instructions. *T.E.L.* teaches PC users about subjects such as cities, flowers, political leaders, animals, musicians, sportsman, celabrities, and historical people. Users can also create their own subject fialds.

BBASIC teaches users to program the PC with BASIC. Functions include arithmetic functions, differed mode, print, input, loops, flow chart, and simple graphics. *ABASIC* shows functions of Advanced BASIC for the PC including file manipulations, string and substring manipulations, structured programming, advanced graphic functions, and colors. *(List Price: Not available)*

Requires: 64K, one disk drive, color/graphics adapter.

Computrickx, Inc.
533 Fifth St.
Santo Rosa, CA 95401
(707) 544-8363

Principles of the IBM PC and Computer Programming

876 A series of advanced tutorials designed to train users to develop an understanding of processing data using the IBM PC. The tutorials provide the beginner with the concepts and vocabulary necessary to communicate with tha computar. They includa basic processing cycles, hardware, software, and data and file formats. Other advanced tutorials will include structured programming, system analysis and design, IBM PC Disk Operating System, and Macro Assembler. *(List Price: One 320K disk $29.99, two 160K disks $39.95)*

Requires: 64K, one disk drive.

Interactive Tutorial Systems
1266 Soldiers Field Rd.
Boston, MA 02135
(617) 783-3187

Teacher Aide

877 A program that enables teachers to maintain and control student information files, test grades, course averages, and classroom attendance. Test scores can be tabulated to provide overall statistics on student and classroom performance, or detailed statistics to enable test question item analyses to be calculated. A special create-tests option allows a data base of test questions to be maintained, from which individual tests can be generated either automatically or under user control.*(List Price: $57)*

Requires: 48K, one disk drive, printer.

New Venture Systems
P.O. Box 2141
Chesapeoke, VA 23320
(804) 482-1889

School Executive

878 A manu-driven program that automates record keeping functions for a school administrator's office. Modular and coded in interpretive *BASIC*, the program's menus provide access to studant, class, teacher, and grade information. Printed reports include class rosters, student schedules, grades, and students by category. *(List Price: Full system, one yeor's upgrodes, ond telephone support $1,245; user guide ond demonstration disk $45; demonstrotion disk only, $15)*

Requires: 64K, two disk drives, printer.

Software Quality Associotes
P.O. Box 50083
Polo Alto, CA 94303
(415) 324-8088, 321-4208

The Coach

879 An on-line training program that aids users in running the manufacturer's *Softwore Fitness* program. The *Cooch* is a lesson-driven program for use with *Computer Lessons*. A separate computer lesson for each of the *Softwore Fitness* program applications is included.

Open Systems, Inc.
430 Ook Grove #409
Minneopolis, MN 55403
(612) 870-3515
TWX: 910-576-1743

School Daze

880 A program that allows users to perform many common and uncommon conversions such as liters to quarts, furlongs to inches, and grains to scruples. The package is especially useful for history students who want to create a chronological time line of appropriate dates and events. *(List Price: $25; monuol only, $10)*

Requires: 48K, one disk drive.

Metomorphics, Inc.
154 Montgomery Ave.
Bala Cynwyd, PA 19004
(215) 668-9000

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EDUCATIONAL

Friendlyware

881 A three-disk software package designed as a starter system to take the novice to a more advanced stage while showing the potential power and capabilities of the PC. Programs range from basic introduction to home and business applications to thinking games. *(List Price: $49.95)*

Requires: 64K, one disk drive.

FriendlySoft, Inc.
213 Pebblebrook
Arlington, TX 76014
(817) 277-9378

Arithmetic Games

882 Two sets of arithmetic drill and problem-solving programs for students in second grade and up. Students have a choice of playing the games individually, competing with the computer at any of three skill levels, or playing with a classmate. Set 1 includes Beono and Rockets; Set 2 includes Discovery Mochine and Number Chase. Each set includes one disk and an instruction card.*(List Price: Eoch set $60)*

Requires: 64K, one disk drive.

Science Reseorch Associotes, Inc.
155 N. Wocker Dr.
Chicogo, IL 60606
(800) 621-0476, (312) 984-7000

Fact Track

883 A program by Science Research Associates that helps students learn basic arithmetic skills. It is organized according to levels of difficulty. Mastery of the program's 390 questions (sums and products of 1-digit numbers) can be measured in two ways: correct answer and rate of response. *(List Price: $90, IBM Product Center prices)*

Requires: 64K, one disk driva, color/graphics adapter.

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alosko, Howoii

The Instructor

884 A tutorial program for first-time computer users or those who want to learn better and faster methods of using the PC.*(List Price: $60)*

Requires: 64K, one disk drive, (printer optional).

Individual Softwore, Incorporoted
24 Spinnoker Pl.
Redwood City, CA 94065
(415) 591-4166

Gradebook

885 A program that aids a teacher in maintaining a gradebook. Grades for up to 28 weeks for 35 or more students are recorded. Grade averages are automatically calculated and letter grades ara assigned according to a standard scale that can be adjusted to the teacher's requirements. Grades can be changed or the lowest grada ignored in the grade-averaga calculation. Tha program is menu-driven, and names can be entared onca and carried over to different classes. *(List Price: $99)*

Requires: 64K, two disk drives, printer.

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

eduCAItor advoCAIte Authoring System

886 Software that allows nontechnical people to write computer-aided instruction (CAI) courses. The system features branching capability to permit an unlimited number of student learning paths. It enables users to insert, delete, or revise course data. Automatic learner statistics to simplify student or lesson evaluations are also provided. *(List Price: $590)*

Requires: Not available.

eduCAItor, Inc.
38 Moin St.
Hudson, MA 01749
(617) 562-6222

Typing Tutor

887 An interactive, touch-typing instruction and drill program that can be personalized to suit individual needs and skill levels. The program creates individualized typing drills requiring gradual increases in speed and accuracy. All drills are based on a built-in vocabulary, and progress is monitored by keeping track of the keys known and those being learned.*(List Price: $25)*

Requires: 48K on disk drive system, 32K on cassette recorder.

IBM Corporotion
Systems Products Division
P.O. Box 1328
Boco Roton, FL 33432
(800) 447-4700, 322-4400 Illinois,
447-0890 Alosko, Howoii

Touch Typing Made Easy

888 Fifteen lessons designed to teach touch typing. Program features include on-screen keyboard to help users avoid hunt and peck typing methods. Available on monochrome disk.*(List Price: $24.95)*

Requires: Not available.

Alkozor Associotes
2638 S. Lynn St.
Arlington, VA 22202

Face Maker

889 An educational game that teaches children between 5 and 8 years old to communicate with a computer. The program uses menus and a joystick to teach children how a computer can be used to create and manipulate graphics images. A blank faca outline can be completed by selecting from menus of eyes, aars, and hair. Faces can be named and saved on an initialized disk.

Children can also write very simple programs to animate the face with a series of expressions: smiles, winks, frowns, and wiggling ears. Expressions make appropriate noises when the face adopts the expression. A memory development game is included that allows the computer to perform a sequenca of expressions with the face.*(List Price: $40)*

Requires: 64K, one disk drive, (color monitor recommended).

Spinnoker Softwore
26 Brighton St.
Belmont, MA 02178
(617) 484-8444

Story Machine

890 A sound and animation game designed for children ages 5 to 9. Children laarn how to communicate with a computar by using a keyboard whila developing their ability to write sentences and paragraphs. A list of words is provided including nouns, verbs, prepositions, and other parts of speech.

Children can write any sentence using the word list and type it onto the screen. Several sentences can be sequenced to form a paragraph. Sentences and paragraphs can be animated using full-color graphics and sound. Stories can be saved on an initialized disk.*(List Price: $45)*

Requires: 64K, one disk drive, (color monitor recommended).

Spinnoker Softwore
26 Brighton St.
Belmont, MA 02178
(617) 484-8444

Easylearn

891 A CAI (computer-assisted instruction) system that uses sound, graphics, and monochrome separataly or in combination for training purposes, business presentations, schools, or home use. Courses of up to 2,000 screens can be developed using either monochrome or color displays. The system includes various preprogrammed sounds and an interface for support of other audio responses.*(List Price: $170, documentotion $10)*

Requires: 48K, two disk drives, 80-column monitor.

Mirocle Computing
313 Clayton Ct.
Lawrence, KS 66044
(913) 843-5863

ATI-Power for PC-DOS

892 An interactive training program that teaches 12 of the most common PC-DOS commands in less than ona hour. Tha user learns to display directory, copy files and disks, rename files, and perform other functions. The program also teaches monitoring, maintanance, and trouble-shooting. *(List Price: $75 including monual)*
Requires. 48K, one disk drive.
Softwore Troining Co.
1025 Ocean Ave. #204
Sonto Monico, CA 90403
(213) 306-7015

Plan-Power for SuperCalc, VisiCalc

893 An interactive training program that teaches financial planning applications of eithar *SuperCalc* or *VisiCalc*. Tha user learns to create, manipulata, retrieva, and print data via instructions on the disk. After completing training, tha user can arrange and calculate complex mathematical data. *(List Price: $75 including manual)*
Requires: 48K, ona disk drive.
Softwore Training Co.
1025 Ocean Ave. #204
Sonto Monico, CA 90403
(213) 306-7015

PC Poetry

894 Software that displays new poems. Titles include "Life," "Time," "Answer Man," "Xmas Wish," and more. Eight different poems are included. *(List Price: $19.95)*
Requires: 48K, one disk drive, 80-column monitor.
Business Application Systems
P.O. Box 36008
Oaklondon, IN 46236
(317) 897-5350

Mr. Math Arithmetic Tutor

895 An educational program that reinforces basic arithmetic skills taught in grades 1 through 5. The student can selact addition, subtraction, multiplication, or division, and proceed at his or her own pace through tan levels of complexity. Problams are generated randomly so they diffar from session to session. A scoring system for competition is also provided.*(List Price: $29.95 including o 30-page instruction manual)*
Requires: 64K, one disk drive.
TERM Computer Services
P.O. Box 725
New Providence, NJ 07974

Computertutor

896 Software that teaches novica users how to run a PC. The program includes an interactiva disk, a DOS reference card, function key labels, and a guida to IBM manuals. *(List Price: $39.95)*
Requires: 48K, one disk drive.
Comprehensive Softwore
P.O. Box 90833
Los Angeles, CA 90009
(213) 743-5508

IBM BASIC Programming Course

897 Ten self-paced lessons to introduca neophytes to BASIC programming. Lessons includa an introduction to programming, variables, arrays, subroutines, arithmetic commands, input and output routines, and graphics.*(List Price: $39.95)*
Requires: 64K, one disk drive for graphics section, color/graphics adapter.
Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

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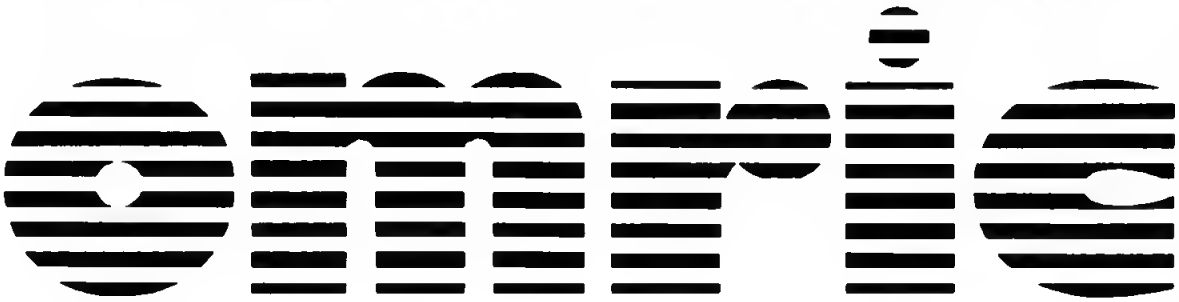

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Tel (203) 666-4240

EDUCATIONAL

Fact Track

898 A computer drill of addition, subtraction, multiplication, and division. It aids students in developing quick, automatic responses to arithmetic operations. The computer reports student speed and performanca, showing which operations should receive additional practice. A choice of difficulty and type of drill is available, and students may work competitively against a set goal. The computer provides mixed practice with calculations and extension skills. *(List Price: $100 including disks ond o teocher's guide)*

Requires: 64K, one disk drive.

Science Reseorch Associotes, Inc.
155 N. Wocker Dr.
Chicogo, IL 60606
(800) 621-0476, (312) 984-7000

WISC-R Computer Report

899 A program that provides printed psychological profiles based on student performances on the WISC-R tests for elementary-aged children. Profiles are compiled from WISC-R subtest scores; GE scores of reading, spelling, and arithmetic; and other specialized tests. The report is intended to be one component of a final analysis interpreted by a psychologist. It includes a 55-page manual. *(List Price: $495)*

Requires: 64K, one disk drive, 80-column monitor, printer.

Southern Microsystems for Educotors
P.O. Box 1981
Burlington, NC 27215
(919) 851-6552

BASIC-Power for MBASIC

900 An interactive training program that teaches the user to analyze business expenses; organize mailing lists quickly; and write, enter, debug, and use business programs. *(List Price: $75 including monuol)*

Requires: 48K, one disk drive.

Softwore Troining Co.
1025 Oceon Ave. #204
Sonto Monico, CA 90403
(213) 306-7015

Unistar I

901 A program for developing individual educational reports for children with learning disabilities at the elementary through junior high school levels. It features a visual bar chart profile of the pupil's present functioning level, illustrating strengths and weaknesses. It also includes a series of 700 individualized goals and objectives tailored to the individual student. *(List Price: $650)*

Requires: 64K, one disk drive, 80-column monitor, printer.

Southern Microsystems for Educotors
P.O. Box 1981
Burlington, NC 27215
(919) 851-6552

Power-Pack for WordStar

902 A training package that teaches tha user to perform *WordStar* word processing functions. The user can learn to create, edit, and print documents, as well as control format and search and replace. *(List Price: $75 including monuol)*

Requires: 48K, one disk drive.

Softwore Troining Co.
1025 Oceon Ave. #204
Sonto Monico, CA 90403
(213) 306-7015

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CSR Trainer 3000

903 A computer-assisted instructional system that runs on the IBM PC and simulates IBM's IIAS/IIPS system. IIPS is a widely used instructional delivery system within large IBM facilities. With CSR Trainer 3000, IIPS courses can be authored and/or presented to students on an IBM PC. Courseware takes advantage of interactive self-study methods. Courses available now from CSR include Introduction to Data Processing, the IBM Personal Computer, and JES3 System Design, Operation, and Problem Resolution. Additions to the catalog of courses are planned. Courses authored on the IBM PC may be uploaded through a telecommunications link to a large mainframe using IIPS. *(List Price: $5,000)*

Requires: 64K, one disk drive.

CSR Computer Systems Research, Inc.
P.O. Box 45
Avon, CT 06001
(203) 678-1212

Micro Discovery

904 A program that introduces students to the microcomputer through everyday language and hands-on experience. Students need no prior experience. Disk programs provide graphic presentations while computer simulations call for student involvement and provide an example of real-life work situations.

Students learn the basics of theory, operation, capabilities, programming, and terminology. They also consider the implications of the computer's impact on society. The Student Worktext is appropriate for a wide range of students. The program can be taught in a 6-week period with minimal teacher involvement. *(List Price: $190 including two disks, 20 copies of Student Worktext, and one Instructor's Guide.)*

Requires: 64K, one disk drive.

Science Research Associates, Inc.
155 N. Wacker Dr.
Chicago, IL 60606
(800) 621-0476, (312) 984-7000

Personal Computer Tutor

905 A program that teaches users BASIC at their own pace through animation, reinforcement, and hands-on experience. *(List Price: Each level $35, set of three levels $95)*

Requires: 64K, one disk drive (introductory), two disk drives (intermediate), color/graphics adapter.

Software Quality Associates
P.O. Box 50083
Palo Alto, CA 94303
(415) 324-8088, 321-4208

Word Whiz, States and Caps

906 Two interactive learning programs for children in grades 1 through 8. *Word Whiz* is a spelling program adaptable to different skill levels. *States and Caps* uses high-resolution graphics and sound enhancements to teach names of U.S. states and capitols. *(List Price: Word Whiz $29.95, States and Caps $29.95)*

Requires: 64K, one disk drive, color/graphics adapter.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

WAIS-R Computer Report

907 A program based on the WAIS-R test for adolescents and young adults. It compares individuals with standard, chronologically based psychological achievement levels; lists personal strengths and weaknesses; checks for signs of brain injury, schizophrenia, emotional disturbance, and other behavior disorders; and makes recommendations based on all these factors. It is designed to supplement a psychologist's report, with the psychologist adding his own observations, interpretations, and recommendations. *(List Price: $495)*

Requires: 64K, one disk drive, 80-column monitor, printer.

Southern Microsystems for Educators
P.O. Box 1981
Burlington, NC 27215
(919) 851-6552

Sunmax

908 An educational game in which as many as nine players try to guess the correct angle for a fixed flat-plate solar collector to maximize the solar energy available for home heating, hot water heating, or home air conditioning in more than 200 cities around the world. Written in BASIC. *(List Price: $8)*

Requires: 16K, (other requirements not available).

Solortek
RD#1 Box 255A
West Hurley, NY 12491

Computer Discovery

909 Educational software that teaches computer history, hardware and software concepts, how to write simple programs, and the computer's role in society. Workbooks at the junior and senior high school reading levels are available. *(List Price: $200)*

Requires: 64K, one disk drive, color/graphics adapter.

Science Research Associates, Inc.
155 N. Wacker Dr.
Chicago, IL 60606
(800) 621-0476, (312) 984-7000

Cross Clues

910 A word game that calls on vocabulary, spelling, and word-structure skills as two players compete to uncover the hidden words in an interlocking grid. Luck may influence the outcome, and players of different abilities may choose the amount of time allotted for each turn. Novices are guided through a sample game and learn by doing. The game includes oversize characters, graphics, and optional sound. For ages 12 and up. *(List Price: $29.95)*

Requires: 64K, one disk drive.

Science Research Associates, Inc.
155 N. Wacker Dr.
Chicago, IL 60606
(800) 621-0476, (312) 984-7000

Math Drills

911 An educational software program that offers practice in addition, subtraction, multiplication, and division with randomly generated problems in any difficulty range. The user's scoreboard monitors progress, number right, number wrong, average, speed, best prior average, and best prior speed. Another scoreboard presents problems missed on three consecutive guesses and supplies the correct answers. *(List Price: $39)*

Requires: 36K, one disk drive, 80-column monitor.

Storwore
Dept. P2
3901 Davis Pl. N.W.
Washington, DC 20007
(202) 466-7351

D.B. Power for dBASE II

912 An interactive training program that emulates dBASE II and teaches the user its most common commands in 40 minutes. It guides the user through each step of preparation, maintenance, and monitoring of data bases. *(List Price: $75 including manual)*

Requires: 48K, one disk drive.

Software Training Co.
1025 Ocean Ave. #204
Santa Monica, CA 90403
(213) 306-7015

SpeedRead

913 A speed-reading tutor that trains users to recognize recurring words and phrases. It can be used as part of a self-study tutorial or as a teaching aid when used in conjunction with high school or college texts. It is recommended for ages 12 through adult. *(List Price: $59.95)*

Requires: 64K, one disk drive.

Optimized Systems Software, Inc.
10379 Lansdale Ave.
Cupertino, CA 95014
(408) 446-3099

EDUCATIONAL

Educational Package

914 A series of programs that use sound and color to aid parents in teaching children reading and arithmetic. *Numbers* program teaches basics and advances to fractions. *Vocabulory* teaches the preschooler letters and basic words, advancing to sentences. *(List Price: $50)*
Requires: 128K, one disk drive, color/graphics adapter.

Personol Computer Products
1400 Colemon Ave., Ste. C-18
Santo Cloro, CA 95050
(408) 988-0164

FORTH Computer-Assisted Instruction Course

915 A program that teaches novices tha FORTH language. The self-prompting program includes the FORTH language and FORTH editor. Users can proceed at their own speed and query the program for help as they learn to write and execute FORTH programs. *(List Price: $59.95)*
Requires: 64K, one disk drive.

International Computers
13048 Olive Blvd.
St. Louis, MO 63141
(314) 878-8838

PERSONAL

Shopping Organizer

916 A program with which users entar shopping lists into the PC, including partinant information about coupons or specials. Each list can be printed out in the same order the items appear in the grocery store. *(List Price: $25; monual only, $10)*
Requires: 48K, one disk drive, (printer optional).

Metomorphics, Inc.
154 Montgomery Ave.
Balo Cynwyd, PA 19004
(215) 668-9000

Savings Account Analysis

917 A homa finance program that uses four variables of which any three must be entered to obtain the fourth variable. The variables are the original amount in the account, the final amount in the account, the interest rate, and the number of periods. The user can select any number of compounding periods in a year and the program provides on a period-by-period basis the original balance, the interest for the period, and the final balance for tha period. It also computes the total interest earned over the total number of periods and the final balance. It can be used with the manufacturer's other financial programs. *(List Price: $100)*
Requires: 64K, one disk drive, (printer optional).

Design Doto Systems Corporotion
5270 N. Park Ploce N.E.
Cedor Rapids, IA 52402
(319) 373-1571

Comput-a-Sketch

918 Software designed for children that allows users to draw single-line designs in the horizontal and vertical dimensions by using tha PC kaypad. *(List Price: $10)*
Requires: 48K, one disk drive, color/graphics adapter.

Softwore Laboratories, Inc.
6924 Riverside Dr.
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(800) 531-1309, (614) 889-5083
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Home Track Diskette

919 Four programs that keep track of important homa data: *Chekbook* records checking account transactions; *Blokbook* is an address book; *Datebook* informs users of upcoming evants; and *Numbers* is a magnetic record of account numbers. *(List Price: $20)*

Requires: 64K, one disk drive.

Kejon E-ware
5105 Liles Rd.
Roleigh, NC 27606
(919) 851-6552

Chequemate Plus

920 A program that provides home financing features including checks, charge cards, cash control, automated teller transactions, accounts payable, budgeting, graphs, balance sheets, and incoma statements. Complate raports may be printed or reviewed on the screen. *(List Price: $150)*

Requires: One disk driva, printer, 80-column monitor.

Masterworks Softwore Inc.
25834 Norbonne Ave.
Lomito, CA 90717
(213) 539-7486

Home Secretary

921 A series of programs to aid in home management. Programs include a personal directory of telephone numbers, birthdays, anniversaries, and personal relationships. Also included are a household inventory, checkbook register, daily/monthly calendar of up to eight daily user-specified activities, a recipe file, a credit card inventory, a home and car maintenance record, medical records, and a user-defined personal financial record. *(List Price: $79.95)*

Requires: 64K, one disk drive, printar.

Alpho Computer Service
P.O. Box 2517
Cypress, CA 90630
(714) 894-6808

Eliza

922 An artificial intelligence demonstration program. *Eliza* functions as a nondirective psychotherapist that analyzes each statement as the user types it in and then responds with its own comment or question.

The program is a version of the original *Elizo* developed at the Massachusetts Institute of Technology in 1966 for mainframe computers. *(List Price: $25, source progrom $20)*

Requires: 64K, one disk drive.

Artificial Intelligence Research Group
921 N. La Jollo Ave.
Los Angeles, CA 90046
(213) 656-7368, 654-2214

Household Inventory

923 An inventory program that helps users keep track of household possessions. Records are updated and cross-referenced electronically and track up to 100 items by room, serial number, and date of purchase. *(List Price: $95; monual only, $25)*

Requires: 48K, one disk drive, printer.

Metomorphics, Inc.
154 Montgomery Ave.
Bala Cynwyd, PA 19004
(215) 668-9000

Fifty Programs For the PC

924 This set of 50 programs includes a selection of home and business programs, games for adults and children, and several utilities. The programs include straight line depreciation, weight control, credit card and salesman's expense registers, biorhythms, and many more. *(List Price: $50)*

Requires: 48K, one disk drive.

Softwore Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309, (614) 889-5083 Ohio
CompuServe: 71535,1670

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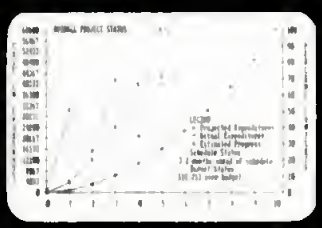
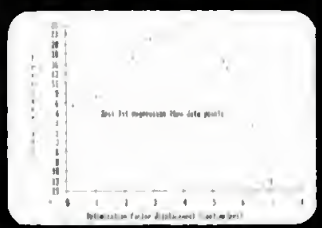
- **SORT** is a super fast multi-key sorter-merger program for single or multiple files. You can use it with PLOTRAX for sequencing unsorted data, or in other sorting applications. $27 ($15 with PLOTRAX)
- **JOBTRAX** is a planning and monitoring tool for engineering, architectural, and construction projects. You can easily plan manpower and resource requirements and monitor project budget and schedule status with easy-to-read graphical reports, and important status information. Built in screen editor. $250.
- **CROSFIRE** (a video game), **DRWBOARD** (a program which lets you create your own pictures), and **CROSSREF** (a program which crass references variables in other programs) are included on each software diskette at no extra cost. (thru 9/30)

HARDWARE
- **GRAFTRAX**plus is a set of three plug-in Epson EPROMS which upgrade early models of the MX-80 and the IBM printer to provide graphics capability (MX-100's are standard with graphics capability). Includes Manual. $58





Omicron Software Dept
Engineering Science, Suite 590
Bldg 57, Executive Park South, N E
Atlanta, Georgia 30329
Phone (404) 325-0124

TRANSPLOT @ $27 EA _____
PLOTRAX @ $97 EA _____
SORT @ $27 EA _____
JOBTRAX @ $250 EA _____
GRAFTRAX @ $58 EA _____
MX-100 III @ $690 EA _____
TOTAL _____

Omicron Our Software Speaks for Itself.
Prices Valid Thru October, 1982

PERSONAL

Home Budget

925 A home financial management program that analyzes income and expenses and prints monthly and year-to-date summaries. *(List Price: $59.95; documentation only, $15)*

Requires: 64K, ona disk drive, printer.

Howe Software
14 Lexington Rd.
New City, NY 10956
(914) 634-1821

Home and Business Expense Organizer

926 A home and business financial program with built-in self-teaching learn mode and fast-path quick moda. The program organizes and itemizes expenses; features built-in sales tax table; and calculates sales-tax automatically; YTD reports; and audit trails. *(List Price: $60)*

Requires: 64K, two disk drives, printer.

Castish International Corporotion
1636 Carmelina Ave.
Los Angeles, CA 90025
(213) 826-4600

Personal Appointment Calendar (PAC)

927 A calendar program that keeps track of appointments for a year et a time, with up to eight appointments each day. Appointment changes can be made and appointments for any day may be printed. Step-by-step instructions are included. *(List Price: $49.95)*

Requires: 32K, ona disk drive, (printer optional).

V.J. Demuro
8459 N.W. 3rd St.
Corol Springs, FL 33065
(305) 753-5893

M.65 Astrological Research System

928 A software system designed by astrologers for the professional astrologer. it functions both as a complete chart service and as a research data base. Tha user can store thousands of charts and accompanying identifiers, and search a data base for a wide variety of report results. The purchase includes a year's subscription to the user newsletter. The program can be adapted for nonastrological uses. *(List Price: $300)*

Requires: 64K, two disk drives, printer.

Motrix Software
315 Marion Ave.
Big Rapids, MI 49307
(816) 796-2483, 796-0381

Kid's Package, Home Package, Fun Package, Business Package

929 A four in one package. Each program may also be purchased separately. *Kid's Package* is for childran ages 3 to 15; *Home Package* contains household and shopping lists; *Fun Pockoge* is a game serias, and *Business Pockoge* contains tax return and loan amortization programs. *(List Price: $20 eoch)*

Requires: 48K, one disk drive.

Software Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309, (614) 889-5083
CompuServe: 71535,1670.

Tax Planning Model

930 A program designed to work with *VisiCalc, SuperCalc,* or *MultiPlan.* It consists of four spreadshaat files, each of which contains a format for filling out taxes on either a professional basis or for personal finances.

The professional program has formats for calculating unmarried/single 1040 returns, unmarried/head-of-house 1040 returns, married/joint 1040 returns, married/separate 1040 returns, and corporation 1120 and partnership 1065 returns. The personal package contains all the above formats except corporate and partnership. *(List Price: Personal $100, professional $150)*

Requires: 64K, one disk drive, *VisiCalc, SuperCalc, Multiplan.*

Pansophics, Ltd.
Whistlestop Mall
P.O. Box 59,
Rockport, MA 01966

Smart Checkbook

931 A personal finance package that includes a data base manager, a check writer, budgat and tax information, and reports and tables. The program will support an unlimited number of checkbooks and credit card accounts, and over 2,000 items may be entered on a 160K disketta. The program detects checkbook errors and includes a self-teaching tutorial. *(List Price: $149)*

Requires: 64K, one disk drive.

Softquest
P.O. Box 3456
McLeon, VA 22103
(703) 281-1621

PCNotebook

932 A data management program to use as a checkbook program, name and address file, recipe file, and any othar data put in a notebook. Designed for home or small business. *(List Price: $69.95)*

Requires: 64K, one disk drive.

Solution Software Systems
3930 Whispering Troils
Hoffmon Estotes, IL 60195
(312) 893-5111

Budget Tax Deductions Record

933 A program that enables users to keep a record of all tax-deductible expenditures. Deductions such as medical expenses, charitable contributions, and car expenses are printed and categorized in user-defined categories. *(List Price: $39.95)*

Requires: 64K, one disk drive, printer.

International Computers
13048 Olive Blvd.
Creve Coeur, MI 63141
(314) 878-8838

Household Aids

934 A software package that includes six programs to help organize homeowners' paperwork. *Household Inventory* keaps track of 28 categories of possessions. *Vitol Records* lists important numbers, safe deposit box contents, wills, and insurance. *VCR Index* keeps a master file of all recorded programs. *Resume* updates and prints resumes as needed. *Personal Statement* covers topics pertinent to a personal financial statement. *Name/Address/Phone* keeps name and address information plus two miscellaneous fields. *(List Price: $49.95)*

Requires: 64K, one disk drive, (printer optional).

N.F. Systems, Ltd.
P.O. Box 76363
Atlonto, GA 30358
(404) 252-3302
Source: TCK071

Checking Account Analysis

935 A home finance checking account program that allows users to enter all checks and deposits from their monthly statements and checkbook registers. It then computes checkbook balances. Users can make a one-time entry of automatic payments or deposits and the dates they occur, and they will be included in the balance each time they occur.

The program turns a checkbook register into a data base, allowing users to access by checkbook number, date, or tax-deductible status. It can be used with the manufacturer's other financial software programs. *(List Price: $100)*

Requires: 64K, one disk drive, (printer optional).

Design Data Systems Corporation
5270 N. Park Place N.E.
Cedar Rapids, IA 52402
(319) 373-1571

SLI-Writer

936 A text editor that enables users to create, edit, and print letters. It is designed for home use. *(List Price: $10)*

Requires: 48K, one disk drive.

Software Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309, (614) 889-5083 Ohio
CompuServe: 71535,1670

Bowling League Secretary

937 Software that maintains and updates league statistics for bowling leagues. Both individual and team records are maintained by entering each team member's three weekly scores. Individual fields include team number, individual name, average, handicap, total pins, total games, highest game, highest series, and all individual weekly scores.

Fields for team records are team number, name, wins, losses, percentage, total pins, high team game, high team series. Both standard reports and user-formatted reports are available to the screen and printer. *(List Price: $39.95)*

Requires: 96K, one disk drive, (printer optional).

Mighty Byte Computer
5345 E. Acomo
Scottsdale, AZ 85254
(602) 953-9780

If You Have A Printer

You need our PRINTER OPTIMIZER. We have two gripes with computer printers: one, no matter how fast they print they're much slower than a computer. So here you are with all this processing speed, sitting there waiting for your printer to finish. Two, almost all printers offer a bunch of features like various type sizes, forms control, graphics, enlarged character sets, etc. - but how are you supposed to access these features? Oh sure, the printer manual says: "print an ESC character followed by a CONTROL "K" followed by a three digit value equal to the desired page length...", but how do you do this in the middle of your spreadsheet program? And how do you access all those extra symbols and graphics with a puny half-ASCII keyboard?

Before Mediamix grew into Applied Creative Technology Inc., the idea people there decided to develop the Cuisinart® of the computer industry - a "magic box" that features 64,000 to 256,000 characters of spooling printer buffer, total character retranslation capability including macros, a keyboard that lets you directly select complete printer control sequences with the ease of a pushbutton car radio, adapts serial printers to parallel computers and visa versa, plus many more imaginative features. So many useful features that regardless of the printer you own - our PRINTER OPTIMIZER will bring your printer "up to speed" with the rest of your system and let you take full advantage of it.

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Consider our affordable alternative. For those of you who did not see the review of our product in the July issue of BYTE, we produce a little white box that converts an IBM Electronic Typewriter into a high quality Serial or Parallel computer printer. And now our ETI² (Electronic Typewriter Intelligent Interface) attaches to other brands of electronic typewriters. There are a number of arguments in favor of choosing this route over a mere computer printer and we have a brochure on the subject that you should read.

We apply technology creatively, and you'll find that not only can we communicate the results to you, but each product is better than anything else like it on the market. Call 1-800-433-5373 and we'll send you more information about our company and our products.

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2723 Avenue E East, Suite 717
Arlington, Texas 76011
(817)-261-6905
(800)-433-5373

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Quality manufacturing is what we're building our reputation on. Star is a true manufacturer, not merely an assembler. We even design and manufacture the computer controlled machines that make our parts. With unlimited production capabilities, Star's factories can operate 365 days a year, 24 hours a day, producing more than 100 million parts a month. It is this kind of productivity and total quality control that assures you of getting the very finest printer for the very lowest price.

And the best product for less is what you can depend on getting from Star. Star offers you a full line of reliable printers, printers with divergent technologies to meet your specific needs. And there's more. You get a low cost, high quality printer with a wide spectrum of interfaces to choose from—backed by Star's superior service network, there if you need it.

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MAKING A NAME FOR OURSELVES

200 PARK AVENUE, NY, NY 10166

PERSONAL

Budget Analysis

938 A home finance program with which users can set up budget subcategories coinciding with all household expenses. As many as ten subcategories may be entered for each of the 14 main categories included in the program. After the categories are established, estimated expenses and incomes are entered for each subcategory on a month-by-month basis. Actual amounts can then be entered for each month.

The program compares actual amounts spent to estimated amounts and shows the deficit or surplus for each subcategory. The total surplus or deficit is computed for each main category, each month, and year to date. The program can be used with the manufacturer's other financial software. *(List Price: $100)*

Requires: 64K, one disk drive (printer optional).

Design Data Systems Corporation
5270 N. Park Place N.E.
Cedar Rapids, IA 52402
(319) 373-1571

Budget Master

939 A program designed to assist in keeping track of home inventory and financial budgeting. By entering household assets and expected assets, household liabilities and expected liabilities, personal income and expenses, the program produces a budget for any desired time frame.

Daily financial transactions can be entered into the system, and up to eight budget periods can be stored for display on the screen or printer. The actual income/expenditures can be compared to the budget and a revised budget produced. Comparisons can be produced in graphic display format on the screen or printer. Included in the program is an amortization capability displaying a variable interest rate, mortgage term, and payment breakdown. *(List Price: $200 Conodion)*

Requires: 64K, one disk drive, (printer optional).

Micro Masters Software Ltd.
P.O. Box 513
Edmonton, Alberto, Conodo T5J 2K1
(403) 922-3088

Diet

940 A program that determines the user's basal metabolism from input data and responds with a printout of daily caloric needs. The user adjusts eating and exercising patterns to fit the program-created schedule.*(List Price: $25; monuol only, $10)*

Requires: 48K, one disk drive, (printer optional).

Metomorphics Inc.
154 Montgomery Ave.
Bolo Cynwyd, PA 19004
(215) 668-9000

the reviews are in and the winner is . . .

VOLKSWRITER™ !

Volkswriter promises to be one of the best IBM-based word processors yet **Chris Morgan, Byte, June 1982.**

Finally a PC Word Processor Worthy of the Name **Jack Crone, Personal Computer Age, April 1982.**

The program takes very good care of its user **Will Fastie, Creative Computing, August 1982.**

'Learning to use it was quick easy and fun It is a good piece of software tailored to match a good machine **Robert K. Funkhouser, Dr. Dobb's Journal, July 1982.**

and now, to increase your productivity even more . . .

SPELLGUARD™ !

"Number one software product of the year **InfoWorld, January 18, 1982.**

Volkswriter (list price $195) is **$175**.
Spellguard (list price $295) is **$200**. Purchased together, **$349**. ***Visa and Mastercard accepted***

Demo disks are available for Volkswriter and for Spellguard at $15.00 each. If you decide to buy either after purchasing the demo disk, the price of the demo will be applied to your purchase.

Volkswriter is a trademark of Lifetree Software, Inc.
Spellguard is a trademark of Innovative Software Applications.
VisiCalc is a trademark of VisiCorp

NETWORK, INC. P.O. Box 2246 Dept. PC, Berkeley, CA 94702 (415) 849-2665

Golf Handicap, Golf Tournament

941 Software that maintains records and computes USGA golf handicaps for 250 golfers per diskette. It can be adapted for personal use, golf leagues, or tournaments. Tournament computes scores and rankings with a variaty of handicap systams for golf outings or tournaments and handles up to 500 golfers per outing. The program also selects prize winners and prints rankings.*(List Price:* Handicap *$49.95,* Tournament *$99.95)*

Requires: 64K, two disk drives, Epson or IBM printar.

Systemics, Inc.
3050 Spring St.
West Bloomfield, MI 48033
(313) 851-2504

Bowling League Statistics Manager

942 A program that meintains ell bowling league statistics and memberships, computes individual handicaps and team standings, and prints out various types of reports. Printed reports can be sent to the screen, the IBM parallel printer, or a serial printar.*(List Price: $99.95)*

Requires: 64K, ona disk driva, printer.

Ensign Softwore
2312 N. Cole Rd., Ste. E
Boise, ID 83704
(208) 378-8086

The Home Accountant Plus

943 Personal software that provides a 100-budgat-category maintenance file and keeps track of up to five checking accounts, plus cash and credit cards. It provides bank reconciliation, allows automatic transactions and custom search and retrieval of transactions, and maintains transaction history. It allows for multiple disks and can switch between monochrome and color video display. Graphics for any catagory are by bar graph, line graph, and trend analysis. Enhanced graphics are not available on monochroma display. The program provides forecasting ebility and can print checks, personel balance sheets, net worth statements, and reports of forecasts.*(List Price: $150 including two program disks, monuol, and binder)*

Requires: 64K, one disk drive.

Continental Softwore Co.
11223 S. Hindry Ave.
Los Angeles, CA 90045
(213) 417-8031

Performance Analysis of Passive Solar-Heated Buildings

944 A program that calculetes heating load, solar enargy, and the auxiliary energy required per month and year. It is based on the solar load ratio mathod developed at Los Alamos Scientific Laboratory. *(List Price: $200)*

Requires: One disk drive, (other requirements not available).

Richard Coldwell
2063 43rd Ave.
Son Francisco, CA 94116
(415) 661-7840

Money Maestro

945 A financiel record-keeping package that provides budget trecking and tax reporting. Designed for sole propriators, freelancers, and families, it allows for money management without using double-entry accounting software. Expenses and receipts can be tracked as naeded. Tha program raports totals by category or payee, including monthly and year-to-date budgeted vs. actuals. Data files are stored in BASIC sequential format.*(List Price: $200)*

Requires: 64K, one disk drive, (printer recommended).

Innosys Incorporated
2150 Shottuck Ave. #901
Berkeley, CA 94704
(415) 843-8122

EZMoney

946 A checkbook and cash management system for personal or small-business use. It has 100 user-defined categories and reconcile statements. Reports ara year-to-date and monthly.*(List Price: $44.95)*

Requires: 64K, two disk drives, Epson or IBM printer.

Systemics, Inc.
3050 Spring St.
West Bloomfield, MI 48033
(313) 851-2504

Check Register

947 A checkbook monitoring program with up to 40 ledger/budget headings that print check register or ledger files, or totals by month. It keeps track of uncleared checks and has spread capability for checks entered. *(List Price: $39.95)*

Requires: 64K, ona disk drive, (printer optional).

N.F. Systems, Ltd.
P.O. Box 76363
Atlonto, GA 30358
(404) 252-3302
Source: TCK071

Household Inventory

948 An invantory systam that enables homeowners to keep track of up to 100 separate items in each of 25 rooms. The value, purchase price, serial number, date of purchase, and miscellaneous information can be stored for each household item. Businesses can use the package for inventory control.*(List Price: $95; monual only, $25)*

Requires: 48K, one disk drive, 80-column monitor, printar.

Metomorphics Inc.
154 Montgomery Ave.
Balo Cynwyd, PA 19004
(215) 668-9000

PCHMS - Personal Computer Home Management System

949 A software package that helps manage personal, household, and business data in a home setting. It maintains addresses and phone numbers, medical and dental information, and more. The user may define up to ten custom files and has a choice of monochrome or color output. Also included are a printing celculetor, memo writer, metric converter, data and digital clock display, 20-year calendar, end directory of state abbreviations.*(List Price: $89.95 including o backup utility program and user guide)*

Requires: 64K, one disk drive, color/graphics adapter, (printer optionel).

Arlington Softwore+Systems
97 Bartlett Ave.
Arlington, MA 02174
(617) 641-0290

PERSONAL

PC/Personal Finance Program

950 An accounting system designed for both accountants and novices, which keaps detailed and identified records of incoma, expenses, and budgets. Itams are filed into ona of 43 categories users establish to suit their needs. Features include a variaty of reports on a monthly, last 12 months, year-to-date, and annual basis. It prints 80-, 132-, or 233- (with an Epson MX-100 printer) column condensed character spreadsheet raports to suit configuration.

The program sorts and totals tax-deductible items in nine different categories; it monitors credit card payments and dabt; reconciles bank statements using an on-the-scraen form tha user fills in; and it maintains and balances checkbooks, keeping the user's checkbook on a single disk.

It rolls ovar financial information from year to year and can keep several years' worth of statistics on a singla disk. Tha program also displays bar graphs (in color if desired) of cash flow, budget performance, income or expense category trends, or checkbook balances. *(List Price: $95)*

Requires: 64K, ona disk drive.

BestPrograms
P.O. Box 2370
Alexandrio, VA 22301
(703) 549-3663

Credit Master

951 A system that prevents overcharges on credit cards or multipla submissions of the sama charge. Tha program logs purchases and compares them to invoices. *(List Price: $50 including documentotion)*

Requires: 48K, one disk driva.

Fogle Computing Corporation
P.O. Box 5166
Spartonburg, SC 29304
(803) 574-4950

Automated Telephone Directory

952 A program that develops a personal talephona directory of names, addresses, telephona numbers, and pertinent comments related to each entry. Directory information can be changed, added to, or deleted from the data file. The program prints entries of up to six lines on "one-up" mailing labels. *(List Price: $50)*

Requires: 64K, one disk drive, 80-column monitor.

Microbase Softwore Inc.
P.O. Box 40353
Indionopolis, IN 46240
(317) 877-4304

Personal Financial Management

953 A financial record keeping and budgeting system for family and personal use that prints income and cash flow statements, balance sheats and net worth statements, actual vs. planned variance reports, and miscellaneous worksheets. A debt amortization program is also included.*(List Price: $75)*

Requires: 64K, two disk drives, Epson or IBM printer, monochrome display.

Professionol Softwore Concepts
P.O. Box 483
Hozelwood, MO 63042.

Auto-Dialer, Micro-Minder

954 Two programs geared for personal applications. *Auto-Dioler* is a personal and business telaphone list that interfaces with the Hayes Smartmodem to auto-dial the user's phone. One thousand names and numbers can be stored on disk. *Micro-Minder* is a personal ramindar calendar and weekly organizer that includes an "auto-report" feature to help keep the user on schedule.*(List Price: Micro-Minder $29.95, Auto-Dialer $19.95)*

Requires: 64K, one disk drive.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

Home Finance Program

955 Software designed with the average household in mind. Its four modules include budget analysis, savings and checking account analysis, and loan amortization.*(List Price: $100 each)*

Requires: 48K, one disk drive, (printer optional).

Roll Doto of Iowo Inc.
5270 N. Pork Pl. N.E.
Cedor Ropids, IA 52402
(319) 373-1571

Personal Programs PAC

956 A menu-driven anthology of programs that alphabetically sort names and addresses, balance chackbooks (and print out the results), establish loan payment records, do English/metric conversions, and keep track of messages on a message board.*(List Price: $39.95)*

Requires: 64K, one disk driva.

Alphonetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

Sunheat 1

957 An interactive program that allows users to configure and evaluate solar hot water heating systems. Solar energy values, outside temperatures, and amount of cloudiness are customized for specific locations. Typical hot water usage values and time distribution can be selected, or users can input their own requiremants.

Written in BASIC, the program can contain some or all of the following components: solar collector, heat exchanger, preheat hot water tank, and hot water tank.

The program helps design the user's solar hot water system, and then calculates on a monthly basis how much solar energy can be collected and used by it, plus the percentage of total hot water needs that can be supplied by solar energy on a monthly and yearly basis. *(List Price: $29)*

Requires: 16K, (other requirements not available).

Solortek
RD# 1 Box 225A
West Hurley, NY 12491

Sunsim-2

958 A home use program that simulates a solar home by using flat-plate, tracking solar collectors that follow the sun and are normal to it throughout the day. Ali days are cloudless. Sinca flat-plata collactors ara used, the diffused and reflected solar radiation is calculated and included in the energy collected. A program option allows users to specify the solar collector's efficiency or use the default value.*(List Price: $49)*

Requires: 16K, (other requirements not available).

Solortek
RD# 1 Box 225A
West Hurley, NY 12491

Sunsim-3

959 A program that uses concentrating, tracking solar collectors to simulate a solar homa. The concentrating collectors remain normal to the sun throughout each cloudless day but do not collect diffuse or reflected solar radiation. A collector efficiency input option is included in the program.*(List Price: $49)*

Requires: 16K, (other requirements not available).

Solortek
RD# 1 Box 225A
West Hurley, NY 12491

Sunsim-4

960 A program that calculates the energy available from the sun and demonstrates its use for domestic space heating, cooling, and hot water heating. The program's energy distribution system shows the transfer of solar enargy from the collectors to the thermal storage, heat exchanger or chiller, and then to the living area. Cumulative energy and temperature values are displayed, including solar enargy collected and used, backup (nonsolar) energy used, and tharmal and hot water storage temperatures.

Default values are built into the program, or users can input their own requirements for size of home, volume of thermal storage, and area and angle of solar collector.

The program calculates the solar energy available par hour at any location, including solar atmospheric losses, diffuse and reflected radiation, and seasonal variations in atmospheric transmission.*(List Price: $59)*
Requires: 18K, (other requirements not available).

Solortek
RD# 1 Box 225A
West Hurley, NY 12491

What Do We Name The Baby?

961 A program that enables prospective parents to alectronically find a name for their new child. The data base includes over 2,500 names and variations. Parents choose names according to sex, initial letter, number of syllables, ethnic origin, and group designation. The computar prints out possible names.*(List Price: $25; monual only, $10)*
Requires: 48K, one disk drive, (printer optional).

Metomorphics Inc.
154 Montgomery Ave.
Bolo Cynwyd, PA 19004
(215) 668-9000

Computer Chef

962 An automated recipe file and cookbook that contains over 70 kitchan-tested recipes from salads to desserts. Users may enter their own recipes or type in ingrediants on hand for Computer Chef's manu suggestions. When more servings are needed, or there is less of an ingredient than called for, the program will automatically scale the recipe to fit. Copies of the recipes ara printed out. The program is written in C language.*(List Price: $34.95)*
Requires: 64K, one disk drive, printer.

Norell Doto Systems Corporotion
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

Gymnastics Scoring System, Women's Division

963 Three programs written in BASIC that handle individual and team registration, and determine individual, team, and super-team champions. The program will track Elite plus Class I through Class IV results by age (11 and under, 12 to 14, 15 and over) and will report completa results, plus tie breakers, by class and age categories. *(List Price: $195)*
Requires: 64K, one disk drive, 80-column monitor, printer.

John T. Jung
Tumbling On Booster Associotion
134 Sumoc Ct.
Schuomburg, IL 60193
(312) 893-4254

"The Word" Processor

964 The text of the King James version of the Bible on floppy disks with software for searching out word content or topical refarences. The program can search for any words or phrases. Varses can be displayed on the screen or printed with complate format controls. The system can store permanent libraries of scripture search efforts and cross-referenca tham. *(List Price: $159.95)*
Requires: 48K, one disk drive, (printer optional).

Bible Research Systems
8804 Wildridge Dr.
Austin, TX 78759
(512) 346-2181

GAMES

Temple of Apshai

965 A fantasy game in which players experience life in a world of ancient legends and monsters while searching for fame and fortune. They can take the part of more than 15 million characters genarated by the game program. The same character can ba returned to the dungeon again and again, growing in power and experience.

The program sells the player equipment, keeps track of it, draws a map of the appropriate section of the dungeon, handles the rules, and allows the player 18 options from which to choose during the course of an adventure. The gama includes a fuily illustrated 48-page book of lore and a command summary card. *(List Price: $39.95; Current owners receive the new version for $5 when they return their cassette or disk)*
Requires: 64K, one disk driva, color/graphics adapter.

EPYX
1043 Kiel Ct.
Sunnyvole, CA 94086
(408) 745-0700

$AVE $AVE

IBM PC - ACCESSORIES
COMPUTER BIZ

4232 MONET CIRCLE
SAN JOSE, CA 95136 (408) 281-8970

DISKS

TANDON	TM100-2 DS 320KB	$285
VERBATIM	5¼" 10/Box SS/DD	$26
	DS/DD	$37
DYSAN	5¼" 10/Box SS/DD	$44
	DS/DD	$50
DAVONG	Hard Disk System Fits Inside IBM PC	
	DSI 501 5MB	$1600
	DSI 514 12MB	$2150
CORVUS	External Hard Disk System	
	6IB - 6MB	$2750
	11IB - 11MB	$4300
	20IB - 20MB	$5150

PRINTERS

C.ITOH	8510 AP Parallel	$479
	1550 AP Parallel	$689
	F10 Parallel/Serial 40CPS	$1395
EPSON	MX - 80 W/Graftrax Plus	$440
	MX - 80 FT W/Graftrax Plus	$569
	MX 100 W/Graftrax Plus	$689
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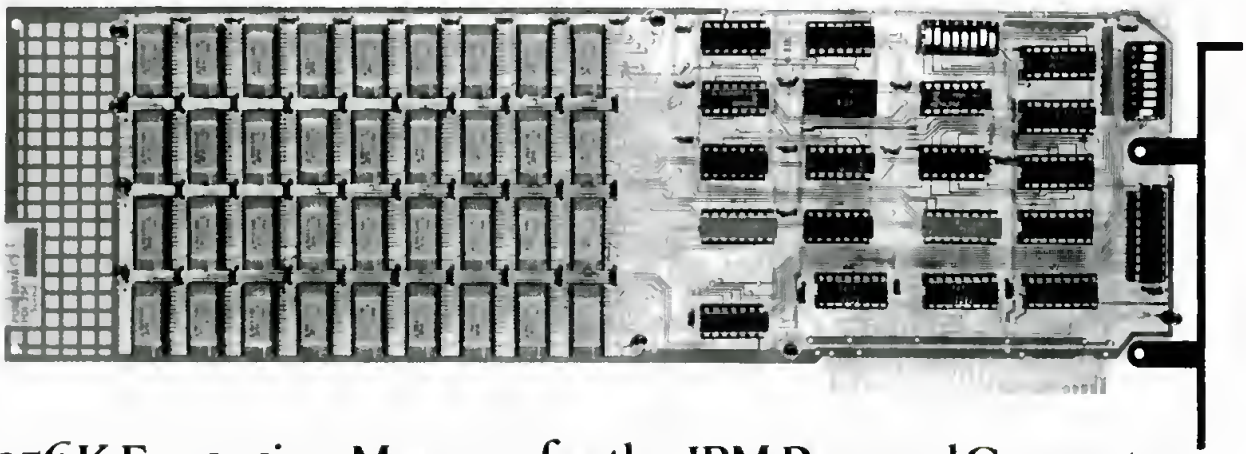

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GAMES

The Original Adventure

966 A game that allows users to explore "Colossal Cave": treasure-seeking, overcoming mythical adversaries, and becoming initiated into the "spells" that operate inside the cave. The PC serves as guide and adviser throughout by describing the cave's interior sights and sounds. When the cave's puzzles are solved, users receive a free, serial-numbered "Certificate of Wizardness." Written in C language, the program uses either IBM's monochrome display or color/graphics adapter. *(List Price: $24.95)*

Requires: 64K, one disk drive.

Norell Data Systems
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
(213) 257-2026

Bridge Tutor

967 A program that teaches beginners and helps advanced players review and develop their Bridge skills. Full-color graphics teach rules and strategy from social to tournament play and give feedback on bids and leads. The package teaches the Standard American bidding system and includes the Precision Club and Scientific bidding systems. *(List Price: $60)*

Requires: 64K, one disk drive, color/graphics adapter.

Computrickx, Inc.
533 Fifth Street
Santa Rosa, CA 95401
(707) 544-8363

Casino Blackjack

968 A Blackjack game that simulates casino play. Players set casino rules and can also specify up to seven hands, up to nine decks, shuffle point, play speed, min/max bets, bankroll, insurance, surrender, double down, and dealer's play on soft 17. A player can request to see cards left in the deck, hit/stand odds, simple card count, and advanced card count during play. Both monochrome and color graphics versions are available. *(List Price: $24.95)*

Requires: 64K, one disk drive.

Survey Systems Inc.
7507 Princeton Ave.
College Park, MD 20704

Games Package 1, Chomp, Astro Attacker

969 *Games Package 1* includes ten games for the PC aimed at both adults and children, and ranging from *Cribbage* to *Othello* to *Space Trek*. *Chomp* and *Astro Attacker* utilize the PC's color graphics. *Chomp* is similar to *Poc-Mon*, while *Astro Attacker* is similar to *Astro Bloster*.

Also available are buttons and bumper stickers for PC owners: an "IBM-PCs Eat Apples" sticker or a "Me And My PC" button. *(List Price: Games Package 1 $29.95, Chomp $29.95, Astro Attacker $29.95, buttons and stickers $2 each)*

Requires: 48K, one disk drive, color/graphics adapter for Chomp and Astro Attacker.

Ensign Software
2312 N. Cole Rd., Ste. E
Boise, ID 83704
(208) 378-8086

Nemesis, Dungeon Master

970 *Nemesis* is a role-playing game modeled on *Dungeons and Dragons*. The player is represented by the cursor on the terminal screen and travels through a world populated by more than 200 different kinds of monsters.

Dungeon Master allows users to create many different dungeons by editing and constructing the necessary elements such as maze maps, item tables, and monster tables. Both games are available on 5¼-inch floppy disks. *(List Price: Nemesis $45, Dungeon Master $40)*

Requires: 64K, one disk drive, CP/M-86 or DOS.

SuperSoft, Inc.
P.O. Box 1628
Champaign, IL 61820
(217) 359-2112, 359-2691
Telex: 270-365

Adventure

971 A game of journeys through a labyrinth of caves in a quest for 15 treasures. Users descend to the depths of "Colossal Cave," fraught with pitfalls, puzzles, perils, and treacherous adversaries. With each increase in skill level, sections of the cave with greater treasures and greater hazards open up. Performance is rated according to one of nine categories from amateur to seasoned adventurer. *(List Price: $30)*

Requires: 32K, one disk drive.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
(800) 447-4700, 322-4400 Illinois,
447-0890 Alaska, Hawaii

PCfootball

972 A game the user plays against the computer or against an opponent. It features a full field, a scoreboard with a running clock, and music. *(List Price: $29.95, demonstration disk $8)*

Requires: 64K, one disk drive, 80-column monitor.

PCsoftware
4155 Clevelond Ave.
San Diego, CA 92103

Erinnen

973 A game that solves colorful picture puzzles and scores points. Included are 45 full-color puzzles, and more are available. *(List Price: $32.95, additional puzzles $15 each, demonstration disk $7)*

Requires: 64K, color/graphics adapter, (other requirements not available).

PCsoftware
4155 Clevelond Ave.
San Diego, CA 92103

Astro-Dodge

974 A game that involves the destruction of meteoroids while confronting hostile enemy ships. Alternate speed levels are available. *(List Price: $39.95)*

Requires: 64K, color/graphics adapter.

Software Digital Marketing
2670 Cherry Ln.
Walnut Creek, CA 94596
(415) 938-2880
Telex: 17-1852

Football Game

975 A player's team is pitted against an opponent who figures odds on every play and makes surprise movements. The game can ba played on either a graphics or monochrome monitor. *(List Price: $15)*

Requires: 64K, one disk drive.

Computerenergy Corporation
P.O. Box 6267
Denver, CO 80206

Bowling League Secretary

976 A program that processes league score data and produces raports with league and playar weekly statistics. It naintains averages, handicaps, high scores, noney paid, and names and addresses. Other ɔptions are available. It is availeble for ona league or multileague processing. *(List Price: $49 for one league, $495 for multileogue)*
Requires: 64K, two disk drives, DOS or CP/M-86.

Microsystems
7201 87th Ave. SE
Mercer Islond, WA 98040
(206) 232-1513

Man in the Moon

977 A game to shoot faces as they appear on the screen. They appear more frequently as the score increases. *(List Price: $14.95)*
Requires: 48K, one disk drive.

Anthony A. Schultz
310 153rd St.
Calumet City, IL 60409

Games

978 A package of ten games including *Othello, Qubic, Blockjack, Stor Trek, Presidents Quiz, Fomous Americans Quiz, Cribbage, Blackbox, Mastermind,* and *Kingdom. (List Price: $29.95)*
Requires: One disk drive, (other requirements not available).

Arrington Software Service
9522 Linstock
Boise, ID 83704
(208) 377-1938

PCube

979 A Rubik's cube simulation that displays an unfolded cube and kaeps track of twists on either a monochrome or color monitor. Color displays allow for changing between Width 80 and double-sized Width 40 undar cassette BASIC. A blank, formatted disk and self-addressed envelope must be included with payment. *(List Price: $10)*
Requires: 32K, color/graphics adapter.

PCube
PC Magozine
1528 Irving St.
Son Francisco, CA 94122

Master Breakdown

980 A break-out arcade game in which ection intensifies with each round completed. Playars knock out bricks from tha top of tha scraan. If a brick hits a player's paddle, he or she loses the ball in play. *(List Price: $50 Conodion)*
Requires: 32K, one disk drive, (joysticks optional).

Micro Masters Softwore
P.O. Box 513
Edmonton, Alberto, Conodo T5J 2K1
(403) 922-3088

Painter I, II, Palate, Saucer

981 *Pointer I* allows users to draw and display objects in 12 colors simultaneously. Images can be saved to disk and loaded into basic arrays. *Pointer II* has the same features as *Pointer I* except it is in black and white, in 640 by 200 mode. *Polote* shows users how to get 12 distinct colors in 320 by 200 mode; 512 color selections are available. *Saucer* is a color graphics program in which tha user defends the world against an elien invasion. *(List Price: $24.95 for oll four programs including disk ond monuol)*
Requires: 64K, one disk drive, color/graphics adapter for *Soucer* and *Pointer I*, (joystick optional for *Pointer I* and *II*). Other requirements not available.

Micro-C
P.O. Box 102
Duluth, CA 30136
(404) 476-5779

Las Vegas Blackjack

982 A reproduction with sounds and graphics of Las Vegas Blackjack including multideck play, splits, double-down, and insurance bets. It teaches card counting with any card weight and keeps a running count. *(List Price: $39.95 including o 35-page instruction monual)*
Requires: 64K, 80-column monitor.

Quolo
1014 Griswold Ave.
Son Fernondo, CA 91340
(213) 365-9526

Arithmetic Games: Sets 1 and 2

983 Two game sets by Science Research Associates that develop and refine the user's mathematical skills. Each set has two games. *Sat 1* lncludes *Beano* and *Rockets*. The object of *Beano* is to match all the numbers on a game card displayed by the computer, by adding, multiplying, subtracting, or dividing numbers the computer randomly selects. In *Rockets* players move rockets across a playing fiald by adding, multiplying, subtracting, or dividing randomly selected numbers.

Set 2 includes *Discovery Mochine* and *Number Chase*. In *Discovery Machine* the computer displays a number, does a secret calculation, and displays a new number. The playar must discover what methematical function the computer used to get the naw number. *Number Chase* develops logic skills. The playar must guess a secret number selected by the computer based on clues provided by the computer. *(List Price: Set 1 $60, Set 2 $60, IBM Product Center prices)*
Requires: 64K, one disk drive, color/graphics adapter.

IBM Corporation
Systems Products Division
P.O. Box 1328
Boco Raton, FL 33432
(800) 447-4700, 322-4400 Illinois
447-0890 Alasko, Hawaii

Recreational/Educational Software

984 A series of games including *Blockjack, Mothtutor, Ping-Pong, Simple Simon, Biorhythm, Flying Foces*. A color/graphics adepter is not required. *(List Price: $19.95 each; diskette $5.95)*
Requires: One disk drive.

Reds
P.O. Box 585
Bound Brook, NJ 08805

GAMES

Stock Market

985 A game that simulates trading on the stock exchange. Each player can invest $10,000, and up to 20 people can play at one time. Players buy and sell three categories of stocks: preferred stocks, blue chip stocks, and speculative stocks. Market movements occur randomly. *(List Price: $10)*
Requires: 48K, one disk drive.

Software Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309

Drag Race

986 A one- to three-player racing game in which players design the car of their choice in the unlimited dragster, pro stock, or stock racing class. The game uses factual car design information. Players specify horsepower, rear end ratio, tire diameter, and tire width. One may race against friends or try to beat the computer. Race length up to 9,000 feet may also be chosen. *(List Price: $10)*
Requires: 48K, one disk drive.

Software Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309

Planet

987 A simulation of the world economy. Under a limited budget, using factual economic formulas, the players' decisions affect the population, the food supply, nature, and the happiness of the people. How long can you rule the planet until it self-destructs? *(List Price: $10)*
Requires: 48K, one disk drive.

Software Laboratories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309

Omegabug

988 A game that features fast action and requires thought and speed. It can be adjusted for different levels so that even preschoolers can play, and it runs on both black and white and color monitors. *(List Price: $20 including manual)*
Requires: 64K, one disk drive.

Personal Computer Products
1400 Colemon Ave. #C-18
Santo Cloro, CA 95050
(408) 988-0164

Executive Suite

989 One of a series of games designed for executives. It simulates the race up the corporate ladder and portrays the dynamics of working in the corporate environment. *(List Price: $40)*
Requires: 64K, one disk drive.

Armonk Corporation
610 Newport Center Dr.
Newport Beach, CA 92660
(714) 760-3955

Everest Explorer

990 A resource management game in which the player tries to scale Mt. Everest without losing supplies or guides. Players watch out for icefalls, storms, and sudden descents. *(List Price: $19.95)*
Requires: 48K, one disk drive.

Acorn Software
634 North Carolina Ave. S.E.
Washington, DC 20003
(202) 544-4259

PC Man

991 A high-resolution video game written in assembly language. Players must eat as many dots as they can before the monster eats them. *(List Price: $29.95)*
Requires: 48K, one disk drive, color/graphics adapter.

Orion Software
P.O. Box 2488
Auburn, AL 36830

Podlaserium

992 An arcade-style game in which the player must destroy alien pods to save the universe. It retains the top five scores permanently. Features include fuel and ammo bonuses, pod shields, pod bombs, sound on/off, and game freeze commands. Strategy and skill are required to use fuel and ammo effectively. *(List Price: $34.95)*
Requires: 48K, one disk drive, 80-column monitor.

DP Computer Services Company
5019 N. Washington Blvd.
Arlington, VA 22205
(703) 276-1333

Championship Blackjack

993 A game that uses full-color display and sound. Up to six players may participate and players set all casino conditions and rules. The cards are always in view, and the game uses a blackjack-table layout. The PC can also participate as a player.

Players can use a double exposure feature to see the dealer's cards during the game, and tournament play is also available. The program can serve as a tutorial by showing players the correct play at any time, whether they use basic strategy or the Julian Braun Point-Count system. *(List Price: $34.95 including documentation; demo disk and documentation only, $8)*
Requires: 64K, one disk drive.

PCsoftware
4155 Clevelond Ave.
San Diego, CA 92103

Projectile

994 A game for one or two players that features four levels of play, moveable players, variable terrain, and an ammunition market. Optional sound is available. *(List Price: $20)*
Requires: 48K, one disk drive, 80-character monitor.

KK Games
251-D Quinby Rd.
Rochester, NY 14623
(716) 424-1676

Games Volume I, Startrek

995 *Games Volume I* includes five games: *Cryptogrophy* contains 100 messages to decode; *Blockjock* includes doubling down, splitting, and changing dealers; *Match It* involves duplicate symbols to match a computer-generated sequence; in *Blockbox* the player determines the location of atoms by firing projectiles through a box; and *Bomb Run* drops bombs on enemy targets. All programs utilize the PC's special function keys and sound capability.

In *Startrek* players use phasers and photon torpedoes to battle Klingons. The level of difficulty can be set at the beginning of the game. An instruction manual is included. *(List Price: Games $29.95, Startrek $34.95)*
Requires: 48K, one disk drive, 80-column monitor.

Zeto Products
P.O. Box 147
Georgetown, TX 78626
(512) 863-3079

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PC INTRODUCTORY SET
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GAMES

Pro Football

996 A program that handicaps professional football against tha Las Vegas betting line. *(List Price: $195 including monuol)*

Requires: 64K, one disk drive.

Computer Sparts Systems
22458 Venturo Blvd., Ste. E
Woodlond Hills, CA 91364
(213) 992-0514

FlippinGame

997 The IBM PC version of Gabriel Industries' Othello 8 x 8 reversal game. *(List Price: $19.50)*

Requires: 64K, one disk drive.

SCC Comes
9025 Andromedo Dr.
Burke, VA 22015
(202) 872-4433

Compucube

998 Compucube simulates the Rubik's Cube, which was originally a mathematical puzzle developed to teach architecture students spatial relations in three dimensions. Users can select difficulty levels by attempting to solve the 2x2x2 cube or tha more difficult 3x3x3 cube. Compucube may be preset with any pattern desired including the pattern of an unsolved solid cube, or in a pattern set not possible with a solid cube. *(List Price: $29.95)*

Requires: 48K, color/graphics adapter.

Stonewore Incorporoted
50 Belvedere St.
San Rafael, CA 94901
(415) 454-6500

Millionaire

999 A stock market simulation game that allows players to buy options on 10,000 shares of IBM stock. The game includes margin accounts, call and put options, stock and industry graphs, news reports, volume indicators, company histories, and buy and sell transaction reports. *(List Price: $49.95 including monuol)*

Requires: 64K, one disk drive.

Micro-Z Applicotions
22704 Ventura Blvd. #141
Woodland Hills, CA 91364
(800) 835-2246, 583-8645

Slynx, Dungeoneer, Medusa, Viper

1,000 *Slynx* runs around the Ivy Corral trying to aat as much tood as it can without running into a wall. Tha game can be played at 10 skill levels. In *Dungeoneer* players must find and bring beck the Ivy Crail. The game uses full-screen graphics and sound. With *Medusa* playars must trap the Medusa monster before it destroys them. In *Viper* playars are pitted against the Viper in an attempt to capture a treasure. All games use graphics and sound, and include a save-score feature. *(List Price: Slynx, Medusa $34.95 eoch; Dungeoneer $39.95; Viper $29.95)*

Requires: 64K, one disk drive.

Ivy Reseorch Inc.
88 Yole Stotion
New Haven, CT 06520
(203) 789-0676

Midway Camp, Computer Stocks and Bonds, Voyager, Galaxy, Computer Draw Poker

1001 A five-game package. In *Midway Camp* the object is to invade and capture Midway Island by surprise; in *Computer Stocks and Bonds* players choose a general strategy and invest in stocks that fit thair game plan, utilizing a "bear" or "bull" market; in *Voyager* (a solitaire game) players explore the four levels of an alien spacecraft's mazelike interior in 3-dimensional simulated graphics; in *Galaxy* playars send their galactic fleets to explore and conquer the universe; and in *Computer Draw Poker* (a solitaire fiva-card stud game) players are pitted against four computer-controlled "players." *(List Price:* Midway Camp *$21,* Computer Stocks and Bonds *$25,* Voyager *$25,* Galaxy *$25,* Camputer Draw Poker *$21)*

Requires: *Midway Compaign, Coloxy* and *Computer Draw Poker* 48K; *Voyager* 48K; color/graphics adapter; *Computer Stocks* ond *Bonds* 64K.

The Avolon Hill Come Company
4517 Horford Rd.
Boltimore, MD 21214
(301) 254-5300

PC Cube

1002 A simuleted *Rubik's Cube* for the PC. *(List Price: $20)*

Requires: 48K, one disk driva, colar/graphics adapter.

C.C. Smith
10626 Eostwood Ave.
Silver Spring, MD 20901
(302) 890-6833

Milky Way Merchant

1003 A trading strategy game in which players determine the needs of different planets and sell appropriata goods. *(List Price: $20)*

Requires: 48K, one disk drive.

Davell Custom Softwore
P.O. Box 4162
Clevelond, TN 37311
(615) 336-3055

Games Package I

1004 A collection of ten games for children and adults. The games include *Qubic, Othello, Kingdom, Cribboge, Blockbox, Space Trek, Blackjack, Mostermind, Americans Quiz,* end *Presidents Quiz. (List Price: $29.95)*

Requires: 48K, one disk driva.

Ensign Softwore
2312 N. Cale Rd., Ste. E
Boise, ID 83704
(208) 378-8086

Jotto

1005 A word gema for ona or more playars versus the computar. The playar(s) and *Jotto* each think of a secret five-letter word. The object is to guess *Jotto's* word before it guesses the player's word. Suitable for ages 9 to 90. *(List Price: $29.95)*

Requires: 64K, one disk driva, 40 or 80-column monitar.

Word Associotes
55 Sutter Street #361
San Francisco, CA 94104
(800) 227-3800 ext. 1138, 792-0990 Californio

VideoTrek 88

1006 A game in which the object is to save democracy from evil villains using an arsenal of photon torpedoes, phasers, and antimatter pods. Five skill levals are available for novices and sophisticated players. Faatures include sound effects and graphics displays. *(List Price: $34.95)*

Requires: 64K, ona disk drive.

Windmill Softwore, Inc.
1058 Joan Dr.
Burlington, Ontorio
Conoda L7T 3H2
(416) 632-6279

Tachyon, Spyder, Hextasy, Battleship

1007 Four video games that feature color graphics and sound. *Tachyon* is an action-packed space game; *Spyder* keeps the player busy trying to avoid an invasion of descending spiders; *Hextasy*, for one to four players, pits the players' strategy against the computer's; and *Battleship* recreates the familiar board game on the screen, adding color and sound. *(List Price: $39.95 each, Battleship $29.95)*
Requires: 64K, one disk drive, color/graphics adapter.

Mirror Images Software
1223 Peoples Ave.
Troy, NY 12180
(518) 274-2335

Cycletron

1008 A real-time graphics game that is written in assembly lenguage and features multiple playing screens. It can operate with a color or monochroma monitor, silant or with sound, and either from a keyboard or a joystick. Complex compilers, real-time graphic editors, and some real-time software were developed for the Space Shuttle. *(List Price: $89)*
Requires: 64K, one disk driva.

United Systems Corporation
401 E. Indian School Rd. #202
Tempe, AZ 85012
(802) 263-0442

Backgammon, Bowling

1009 Tournament-quality Backgammon against the computer on a color/graphics display. In *Bowling* one to four players test their skills in a real-time gama with bowling-pin action. *(List Price: $24.95 each including disk and manual)*
Requires: Color/graphics adapter, (other requirements not available).

C&C Software
54 Sonoma Ave.
Goleta, CA 93117
(805) 685-8802

Starcruiser Commander

1010 An updated version of *Startrek* adepted to the PC keyboard, prompting, and sound features. The game can be played at various levels of difficulty. *(List Price: $20)*
Requires: 64K, one disk drive.

Kejon E-wore
5105 Liles Rd.
Raleigh, NC 27606
(919) 851-6552

Family Games I

1011 A games package that includes *Androids*, which pits computer-controlled, man-eating androids against a player in a survival match. *Paddle-Whack* is a variation of the pong-type games. *Golf* lets the user try to improve a handicap or breek par. *Gunnery* provides practice in firing surface-to-air missiles, and in *Mazer* playars move destroyer tanks through a maze of explosiva obstacles. *(List Price: $20)*
Requires: 48K, one disk drive.

Kejon E-wore
5105 Liles Rd.
Raleigh, NC 27606
(919) 851-6552

Family Games II

1012 A games package that includes *Phoenix*, a classic hangman game in which if the player fails to guess tha word, he or she is eeten by the *Phoenix*. *Nim* and *Tic Tac Toe* are games of logic for two players. *Wumble* gives jumbled letters for tha player to unscramble. In *Cryptor* the user guesses a correct number sequence in as few tries as possible based on program-given clues. *(List Price: $20)*
Requires: 48K, one disk drive.

Kejon E-wore
5105 Liles Rd.
Raleigh, NC 27606
(919) 851-6552

Zork I, Zork II

1013 The object of *Zork I: The Great Underground Empire* is to discavar the 20 treasures of Zork and escape with them and your lifa. *Zork* features interaction in complete sentences (rather than the standard two-word parser). In *Zork II: The Wizard of Frobozz* the Wizard attempts to confound the user's quests using his capricious pawers. *(List Price: Zork I $39.95, Zork II $39.95)*
Requires: 48K, (othar requirements not availeble).

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
(617) 492-1031

Deadline

1014 An interactive fiction game in which the user is one of eight cheracters, each with a different personality and motivation. Characterization is interdependent. *Deadline* features over 25 possible endings, dependent on the amount of "avidence" gathered. *(List Price: $49.95)*
Requires: 48K, one disk drive, 40- or 80-column monitor.

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
(617) 492-1031

Cashman

1015 An arcada-style game featuring fast action and sound effects. The object is to make money by eating doller signs, while outrunning government agents. Available for either monochroma or color graphics interface. *(List Price: $39.95)*
Requires: 64K, (othar requirements not available).

Gross National Products, Inc.
174 Central St.
North Reading, MA 01864
(617) 664-3815

PC/Games I

1016 An anthology of five games: *Blockjack*, *Gollum's Tunnel*, *Mortar*, *Mars Lander*, and *Kismet*. *(List Price: $20)*
Requires: 64K, ona disk drive.

Micro Express
3857 Birch St. #109
Newport Beach, CA 92660
(714) 859-7575

Batrek, Goppa-Gop, Chase

1017 A series of three games. *Batrek* pits the user and the Starblazer ship against enemy craft. *Goppa-Gop* is similar to *Pacman* games. *Chase* is a simple game of chase for two young players. *(List Price: $20)*
Requires: Color/graphics adapter and/or paddles, (other requirements not available).

Kejon E-ware
5105 Liles Rd.
Raleigh, NC 27606
(919) 851-6552

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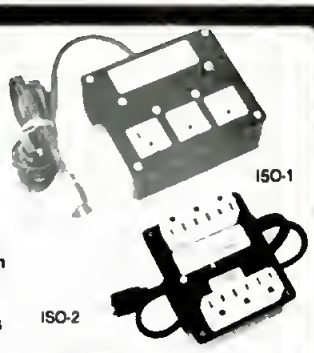

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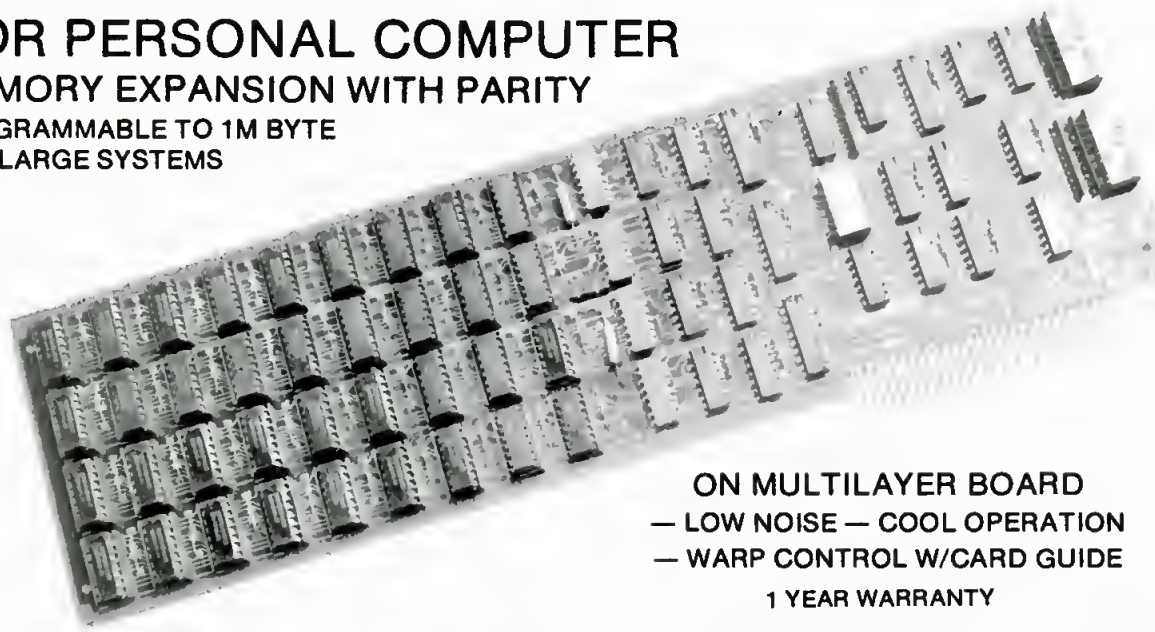

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GAMES

Space Guardian, Butterflies, Mega-Volt, Champion/ Draughts, Jovian Odyssey, Blingsplatz

1018 A series of six games. Spoce Guordion players travel the galaxy searching and destroying alien warships. With Butterflies players try to catch butterflies, put them in jars, and keep them there. The game is keyboard controlled. With Mego-Volt a high-energy chamber generates ball lightning. Players must catch balls as they randomly leave the chamber before they penetrate an antimattar barrier.

Players can pit themselves against their PC with Champion/Droughts, play friends, or even let the PC play itself. The program has different skill levels. With Odyssey the player is lost over one of Jupiter's moons and must find a landing spot while avoiding meteors and volcanic eruptions. A split screen gives both a profile and overhead view of the surface. The game is keyboard controlled. With Blingsplotz, players must defend their spoca patrol from the attacking Blingsplatz. This ground-to-air battle game is keyboard controlled *(List Price: $34.95 each)*

Requires: 64K RAM, one disk driva; Spoce Guordion and Champion/Droughts 80-column monitor.

Omric Corporotion
1268 Moin St. #207
Newington, GT 06111
(203) 666-4240

Snooper Troups Series

1019 A series of interactive mysteries using high-resolution graphics and animation that is designed for users age 10 to adult. The player is a private detective trying to determine which of nine suspects committed a crime and what the criminal's motive was. Players drive around town, question witnesses, search houses for clues, and use the snoop computer to develop background data. Players learn to design overall strategy for acquiring information; test, classify, and relata individual pieces of data; and develop and test hypotheses. *(List Price: $50 for eoch instollment of the series)*

Requires: 64K, one disk drive, (color/graphics adapter recommanded).

Spinnoker Softwore
26 Brighton St.
Belmont, MA 02178
(617) 484-8444

Hi-Rollers, Poker Parlay

1020 Four casino action games: *Slots, Crops, Roulette,* and *Blockjock.* One to four players follow all standard casino gaming rules. *Poker Porloy* allows the computer to play fiva-card draw, five-card stud, six-card stud, seven-card stud, and others. Tha game includes full card displays, buy in, raises, folds, and even borrows from the bank. *(List Price: Hi-Rollers $47; Poker Parlay $37)*

Requires: 48K, one disk drive, color/graphics adapter.

New Venture Systems
P.O. Box 2141
Chesapeake, VA 23320
(804) 482-1889

Ken Uston's Professional Blackjack

1121 A game for adults that teaches the computer-developed blackjack strategies of a professional blackjack playar. It allows the player to "take on the tables" at a choice of over 50 casinos by actively simulating tha playing environments at each, taking into account variations in house rules and dealing systems. The program operates in both color and monochrome. *(List Price: $89.95)*

Requires: 48K, ona disk drive.

Intelligent Stotements, fnc.
P.O. Box 600
Holmes, PA 19043
(800) 345-8112, 662-2444

Floppy Frenzy

1022 A video game that uses IBM's color graphics capability and the speed of the 8088 processor. The object is to lay traps to weaken and ensnare magnat monsters befora they destroy your floppy disk. Extra points are earned by clearing the screen at higher levels whera avil dustmen lurk. *(List Price: $39.95)*

Requires: 64K, ona disk drive, color/graphics adaptar.

Windmill Software, Inc.
1058 Joon Dr.
Burlington, Ontorio
Gonudo L7T 3I12
(416) 632-6279

Stellar Defender, Game Master

1023 Stellor Defender is a space game in monochrome or color. Gome Master provides dice rolling and bookkeeping functions for fantasy role-playing gamas. An advanced version provides chart rolling and other commands. Documentation is available for Gome Master. The advanced version has all functions included in the BASIC version. *(List Price: Stellar Defender $14.95; Game Master monochrome version $19.95, odvonced version on monochrome disk $24.95)*

Requires: Not available.

Alkozar Associotes
2638 S. Lynn St.
Arlington, VA 22202

Galaxy Master

1024 A video space game with the choice of sound or silence. The program automatically chooses a color graphics mode or text mode for the monochrome display, and uses tha 25th display line as a scoreboard. *(List Price: $29.95)*

Requires: 48K, one disk drive, 80-column monitor.

Info-Pros, Inc.
2102 Business Center Dr. #132
Irvine, GA 92715
(714) 851-8975

The Warp Factor

1025 A game of sensor and scanner readings, energy allocation for weapons, shields and warp engines, and battle damage. Multiple computer-as-opponent scenarios include Reman Ghase (with the Gloaking Device, Plasma Torpedoes, and Neutral Zone), Attack on Star Base, Attack on Base Station, and Dogfight. The two-player version allows aach player to choose starships from a different empire, creating situations from skirmishes to all-out space war. A diskette, four data cards, and rule book are included. *(List Price: $39.95)*

Requires: 64K, one disk drive.

Strotegic Simulotions Inc.
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GAMES

Free Enterprise

1026 A strategy game that simulates the challenge of operating a business. Each player acts as an executive of a firm competing with others. Players compete by making decisions about production runs, prices, advertising, and other variables affecting the total financial strength of a company. The choice of three different levels allows novices to compete with experienced business people. The game is for one to six players, adolescents to adults. The package includes a player's guide, a decision-recording pad, a record-keeping pad, and one disk. *(List Price: $60)*

Requires: 64K, one disk drive, (printer recommended).

Science Research Associates, Inc.
155 N. Wacker Dr.
Chicago, IL 60606
(800) 621-0476, 621-0664

Asylum

1027 An adventure game that features full sentence input, over 1,200 locations, and three-dimensional graphics. *Asylum* comes in a vinyl folder with a complete manual. The program runs in machine language on a self-booting disk and requires no DOS or BASIC. Three-dimensional graphics showing your location are done with the standard IBM monochrome display. No graphics board is required. *(List Price: $39.95)*

Requires: 48K, one disk drive, 80-column monitor.

Med Systems Software
P.O. Box 3558
Chapel Hill, NC 27514
(800) 334-5470, (919) 933-1990

U.S. Motors, Atlantic City, Games Pac I, Games Pac II

1028 A series of four games. *U.S. Motors* allows users to try to control the finances of a failing American auto manufacturer and lead the corporation from bankruptcy to success. *Atlantic City* is a series of gambling games in color and monochrome versions including *Roulette, Wheel of Fortune, Craps, Slot Machine,* and *Blackjack. Gomes Poc I* is a series of fantasy adventures and word and education games. *Gomes Poc II* involves space war and military combat games with real-time and interactive graphics. *(List Price: $39.95 each)*

Requires: 64K, one disk drive, color/graphics adapter.

Alphanetics
P.O. Box 597
Forestville, CA 95436
(707) 887-7237

StickFigs

1029 Four games in which stick figures create displays as players proceed with the game. Included are *Simon Says, Pik'm'Qik, Folling Friends,* and *Hong Mon. (List Price: $22)*

Requires: 48K, one disk drive, color/graphics adapter.

New Venture Systems
P.O. Box 2141
Chesapeake, VA 23320
(804) 482-1889

Trilogy, Set the Hostages Free

1030 *Trilogy* is a fantasy game in which players try to find a magic ring. Players must make it past dragons and fight with dwarf armies. *Hostages* is an interactive game with music, sound, and character graphics. The game centers around three heroes who must break through a prison wall to free hostages. *(List Price: $29.95 each)*

Requires: 48K, one disk drive, 80-column monitor.

TexoSoft
1028 N. Modison Ave.
Dallas, TX 75208
(214) 495-5052

Question

1031 A game based on an artificial intelligence model. To play, the user thinks of an animal, city, or famous person and the computer asks questions to guess the subject. The computer becomes "smarter" as the user feeds it information and categories. Users can switch disks midgame, so the categories are limitless. The computer's increasing body of knowledge is pitted against the user's ability to answer questions accurately. *(List Price: $45)*

Requires: 64K, one disk drive, (printer optional).

Alpha Software Corp.
6 New England Executive Park
Burlington, MA 01803
(617) 229-2924

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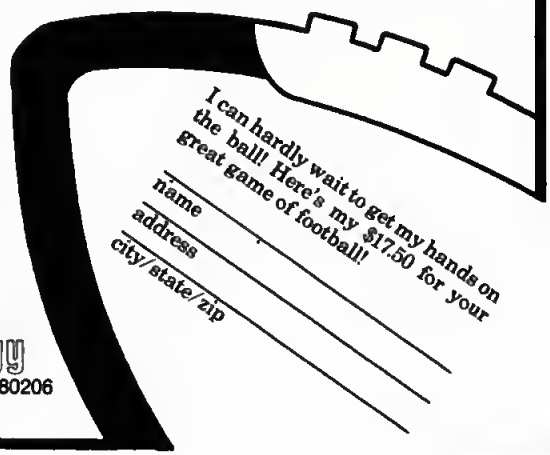

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GAMES

Star Thrower

1032 A space game designed to teach 6 to 10-year-olds how to use a programming language. The game consists of maneuvering spacemen around a playing field in space, reaching a small star before the opponent, and throwing it through a goal on the edge of the playing field. Players work through a series of on-screen tutorials in which they learn to program their spacemen with competitive strategies. A simple programming incorporates fundamental programming concepts such as conditionals and subroutines. *(List Price: $45)*

Requires: 64K, one disk drive, (color monitor recommended).

Spinnoker Software
26 Brighton St.
Belmont, MA 02178
(617) 484-8444

Arcade I

1033 A package of five games: *Mostermind, Acey Deucey, Groon, Beot the Computer,* and *Microbase Downs. (List Price: $19.95)*

Requires: 64K, one disk drive, 80-column monitor.

Microbose Softwore Inc.
P.O. Box 40353
Indionopolis, IN 46240
(317) 877-4304

Aqua Run

1034 An undersea action game designed to take advantage of the PC's processor speed and graphics capabilities. The game includes color graphics and animation. Both novices and experts can play. The game is implemented in machine code. It can be controlled from the keyboard, but optional use of game paddles or joysticks requires a game control adapter. *(List Price: $39.95)*

Requires: 64K, one disk drive, (color/graphics adapter optional).

Soft Spot Micro Systems
24 Dione Dr.
Collinsville, CT 06022
(203) 379-7047

Comtuter, Backgammon/ Checkers

1035 The Comtuter interactive program is designed to teach first-time PC users how to run the DOS system. Comtuter offers instruction levels from simple to advanced. The interactive *Bockgommon* or Checkers program allows users to play the computer or a friend. *(List Price:* Comtuter *$59.95,* Backgammon/Checkers *$39.95* each*)*

Requires: Comtuter *48K, Backgommon/* Checkers 64K; both require one disk drive.

Comprehensive Softwore Support
P.O. Box 90833
Los Angeles, CA 90009
(213) 437-5139

Polycube

1036 A cube puzzle that uses color and two graphic modes to provide seven levels of complexity. Users select from a 1x1 up to a 7x7-sided cube with up to 500 moves to unscramble. *(List Price: $26.95)*

Requires: 48K, one disk drive, color/graphics adapter.

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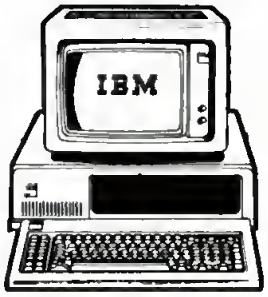

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Support

Section five of the PC Product Guide features accessories, services, publications, user groups and clubs, and dealers. Accessories include items such as printer ribbons, hardware covers, and cleaning kits for PC maintenance. Also listed ere products that increase PC efficiency: keyboard and monitor extension cords, and specially designed furniture such as computer cabinets and printer stands.

The next group is Services which covers such things as training, consulting, and programming. Specialized services include disk copying, data bases for softwere searches and exchanges, manufacturer telephone hot lines for technical assistance, and typesetting directly from word processing systems. We've also covered descriptions of information networks such as The Source and CompuServe. These service networks link personal computers to deta bases stored on large computers and provide electronic mail, shopping, banking, eccess to financial information and news wires, and the ability to program using large computers.

The publications group comprises Books, Catalogs, and Periodicals. The books feature introductions to the PC for novice users as well as technical information for advanced users. Topics include PC hardware; operating systems; applications programs such as word processors and spreadsheets; end programming in BASIC, FORTRAN, and Pascal. Applications for math, science, and business and home financiel management are also covered. The periodicals, some of which ere availabla on diskatte, consist of monthly and bimonthly publications for PC owners. These publications provide hardware and software product information, reports on markating trends, and information for users of epplications programs.

The next group in tha Support section, User Groups and Clubs, lists organizations that help PC users meet and exchanga information. Electronic bulletin boards are also included. Bulletin board services enable users to compose and store messages for other computer users on a communications system such as Tha Source, CompuServe, or a system organized by a user group.

The Dealers group provides information about IBM PC dealers, and dealers and distributors of PC-related products. IBM Product Canters and dealers are listed in alphabetical order by state. For many of the dealers and distributors, specific information about product lines and services is also included.

Support

ACCESSORIES

Memory Jogger

1037 Programmer's aids that are 8½-by-11-inch, easel-mounted reference cards listing commands, statements, and functions for the PC. Instruction sets are alphabetized and color-coded. They are available for BASIC and PC-DOS. *(List Price: $10 each)*

JC Computer Speciolists
P.O. Box 3465
Federol Way, WA 98003
(206) 839-8268

Easy Find Reference

1038 A reference card with 14 panels of information on how to debug BASIC programs. These explain how to get BASIC started; commands associated with controlling BASIC for the development of program execution; and functions related to mathematics, string manipulation, and I/O. It also provides an alphabetized description of over 80 BASIC statements, including disk statements and advanced versions; miscellaneous functions; user logic tables and variables; and graphic and color programming information. *(List Price: $2.50)*

Minimagic Company
104 Pork Rd. #34
West Hortford, CT 06119
(203) 233-6261

Printer Stands, Baskets, Shipping Cases

1039 A variety of printer stands, baskets, shipping cases, and other options. A desk-top modal printar stand and two stand-up printer stands with different widths are available along with a printer stand basket.

Computer shipping cases for the PC with keyboard for the monitor or for the full system with keyboard monitor and printer are also available. Locks and casters for the cases can also be purchased.

A video film recorder to produce color photos or slides from monitor graphics is availabla with a complete selection of dust covers. Keyboard extension cables and a monochrome monitor extension cable set are also available.

The Computer-Mate desk with a recessed bay for the CPU and disk drive. Tha desk comes in 4- and 5-foot modals. *(List Price: Computer-Mote desk 4-foot $399, 5-foot $499)*

Computer Mote, Inc.
1006 Hampshire Ln.
Richordson, TX 75080
(800) 527-3643, 442-4006
(713) 491-6550, (214) 669-9370
TWX: 910-867-4763

Computer Furniture

1040 Hardwood and hardwood veneer computer tables, shelves, and printer tables available in oak or birch with a natural or stained finish. *(List Price: 46-inch work table $175, with top-sider shelf unit $195; 36-inch work table $170; printer table $165; top-sider shelf unit $30)*

Lawrence Wood Works
11th ond Haskell
Rt. 2, Box 407
Lawrence, KS 66044
(913) 842-7797

Printer Replacement Ribbons

1041 Ribbons for various types of computer printers including replacement ribbons for the Epson MX-80 and MX-100 printars. Epson ribbons are available in black and in colors (blue, grean, red, and brown). The MX-80 ribbon is ½ inch by 20 yards; the MX-100 ribbon is ½ inch by 30 yards. *(List Price: MX-80 $8.50 eoch, MX-100 $13 each)*

Aspen Ribbons Inc.
1700 N. 55th St.
Boulder, CO 80301
(800) 525-0646, (303) 444-4054
Telex: 45-0055

Cartridge Ribbons

1042 A service that offers new cartridge ribbons, reloaded cartridges, or loops only. Reloads are sold on an exchange-only basis. After used cartridges are sent in, they are reloaded and returned by UPS. Cartridges are cleaned and tested after reloading. Torn or jammed film ribbons with substantial unused portions are repaired without charge when accompanied by an order. A minimum order is six new ribbons. The company carries Epson, NEC, TRS-80, Diablo, Wang, and Qume/Lanier ribbons. *(List Price: Epson MX-70, MX-80 IBM Motrix Fabric $6.50 new, $3.50 reloaded)*

Ben Torres Ribbon Service
416 E. Stote St.
Redlonds, CA 92373
(714) 792-0831

Electroniture

1043 A combination computer cabinet and solid oak desk. The unit has a large work surface, document holder, and storage space for peripherals and software. It also has room for a small printer, and an optional, matching solid oak stand accommodates both back- and bottom-feed printers using 15-inch and smaller fanfold paper. An optional wire papar bale is available. *(List Price: Desk unit $895, stond $225, paper bale $25)*

The Bench Collection
1387-D Cass Rd.
Sonto Rosa, CA 95401
(707) 526-1074

User's Starter Kit

1044 A kit that includes a library case for diskette storage, a head-cleaning disk, cleaning solution, disk labels, write-protect labels, backup and archive labels, and mylar hub rings. All accessories are packaged in a container suitable for reuse. *(List Price: $29.95)*

100-RALLY Corporotion
2575 E. Bayshore Rd.
Polo Alto, CA 94303
(415) 856-9900

Compucart

1045 An ergonomically designed mobile computer work station that occupies approximately 4 square feet and can be secured with one lock when not in use. It includes an adjustable keyboard shelf and comes with an optional printer cart with accessory drawer, paper supply shelf, wire basket, and a multi-outlet electrical box. The Compucart offers security by returning the computer to the closed position when not in use or when running unattended. Compucart is available in aimond or English oak. *(List Price: Compucart $595; printer cart $225; optional printer, cart drawer, paper-cotch shelf, electricol outlet $40 eoch)*

Compucort
P.O. Box 2095
Tompa, FL 33601
(813) 251-2431

PerfectData Series

1046 Cleaning and maintenence products. The Flexible Disk Drive Head Claaning Kit removes contamination such as oxida deposits, smoka particles, oil, and dust from read/write heads. The Tech Maintenance Kit allows users to clean computer and peripheral compunents such as tape paths, guides, and reed/write heads. The Video Display Cleaning Kit cleans terminal screens and keyboards, and neutralizes static charges. The Anti-Static Kit removes static buildup. The Print Wheel Type Element Cleanar cleans the elements on letter quality printers. Micro Maintenance Kit combines compunents from all other PerfectData products into a single package for users starting a preventive maintenance program for their microcomputer system. PerfectData 200 simultaneously cleans and lubricates both sides of hard and floppy disks while still in jackets. *(List Price: Head Cleoning Kit $29.95, Micro Maintenance Kit $39.95, Tech Maintenonce Kit $24.95, Video Display Cleaning Kit $12.95, Anti Stotic Kit $5.95)*

Innovotive Computer Products
18360 Oxnord St.
Torzano, CA 91356
(213) 996-4911
TWX: 910-493-5964

Support

ACCESSORIES

Anvil Computer Systems Cases

1047 A line of computer carrying cases made from ABS plastic with 5/32-inch ply sidewall material and steel riveting, affording protection from impact damage. The cases conform to the Air Transportation Association specifications for air worthiness. Features include permanently affixed ID tags, recessed handles and latches, end interior partitioning and foam lining for shock absorption. Standard designs are available for disk drives, modems, CRTs, and printers. Custom designs are also available. *(List Price: custom built cases $100–$400)*

Anvil Cases, Inc.
4128 Temple City Blvd.
P.O. Box 888,
Rosemead, CA 91770
(800) 423-4279, (213) 575-8614
TWX: 910-587-4935

Snuffer 60 Automatic Fire Extinguisher

1048 A clean agent fire extinguisher that discharges 6 pounds of Halon 1211, a nonconductive, noncorrosiva agent that minimizes the risk of thermal shock to computer components and magnatic record media. The extinguishar is available in portable or stationary models with a five-yeer warranty. *(List Price: $250 each)*

Technology House
P.O. Box 4281
Warren, NJ 07060
(201) 755-2483

Flexible Disks

1049 Floppy disks available for avary 5¼-inch disk drive. Tha reted life is 12 million passes without errors. Disks undergo a burnishing, overcoating, and lubricating process, and are offered with reinforced hub rings as a standard feature. *(List Price: Single side, double density $4, reversible floppy $4)*

Requires: Ona disk drive.

Omni Resources corporotion
4 Oak Pond Ave.
Millbury, MA 01527
(617) 799-0197

Dustcover

1050 A dust cover of rigid, smoked bronze plastic that provides keyboard protection. *(List Price: $12)*

NH III Computer Accessories
9402 Burtis St.
South Gate, CA 90280

Hi-Rise

1151 A rack for video screen and disk drives that positions the system unit abova the video monitor whera it is aasy to reach and offers shade to the screen. Tha screen is tilted for improved viewing. Constructed of wood, it comes in colors complimentary to the IBM PC. *(List Price: $79.95)*

Hi-Rise Office Aides
7201 Alhombro Blvd.
Miramar, FL 33023
(305) 966-4982

PC-Rover

1052 A mobile station for the PC that is 24 inches high, 13 inches wida, and 20 inches deep. It allows the PC to be removed from the desk top, clearing the work area for other tasks. Features include a lighted power-on indicator and convanience outlets for plugs and cables. *(List Price: $295)*

Tecmor Inc.
23600 Mercantile Rd.
Cleveland, OH 44122
(216) 464-7410
Telex: 241735

Custom-Designed Furniture

1053 Solid oak furnitura custom-dasignad for all standard personal computers. A basic table end cart design can be enhanced with custom-designed accessories including a breadboard shelf for a detachable keyboard, a baskat to hold printer output, a disk hanger, and e document storage devica. *(List Price: $150–$600)*

Williams and Foltz
1816 Fourth St.
Berkeley, CA 94710
(415) 644-2022

DiscSavers

1054 Vinyl sleeves for 5¼-inch and 8-inch diskettes that provide a four-color filing system, a secure fit, and durability. Packaged 12 or 10 (8") per box, they are available in red, blue, yellow, and grean. *(List Price: $6.29 for 5¼-inch, $8.75 for 8-inch)*

Rockroy Inc.
Computer Products Division
7721 East Gray Rd. #103
Scottsdale, AZ 85260
(800) 528-2361, (602) 998-1577

Miscellaneous Accessories

1055 Products from Computer-Mate: Printer stands, a desk-top model measuring 18x10x8 inches. Stand-up models measuring 18x12x26.5 inches or 24x20x25.5 inches are also available with e printer stand basket.

Computer shipping cases for tha IBM CPU and keyboard and for the IBM monochrome monitor are available. Shipping case locks and casters can also be purchased.

A video film recorder that turns color graphics on the monitor into full-color photos or slides.

Extension cables and keyboard extansion cable 3-foot, 5-pin din cable connects keyboard to CPU, $35; monochrome monitor extansion cable set, includes 3-foot, 9-pin monitor extension cable and 3-foot power extension cable. This set connects the monitor to the CPU, $55.

A desk for protecting components provides ample storage and work space. It has e master switch for simultaneous activation of systems, adjustable leg levelers, and roller drawers for storage. Four-foot and 5-foot models available.

Computer-Mate, Inc.
1006 Hompshire Ln.
Richardson, TX 75080
(800) 527-3643, (713) 442-4006
(713) 491-6550, (214) 669-9370
TWX: 910-867-4763

Security Kit

1056 A simple and effective security device that protects the IBM PC from tampering and theft of internel components and cards. Special screws replace standard equipment, and special tools are used to gain access to internel components. A 40-page document on PC security considerations is included. *(List Price: $135)*

PC Security
61 Caselli Ave.
San Francisco, CA 94114

PC Dust Cover

1057 A dust cover of washable, gray corduroy that is designed to protect the IBM PC from the demaging effects of dust. It is contour-fitted for the system unit, monitor, and keyboard. *(List Price: $24.95)*

Systems Softwear
P.O. Box 3203
Durham, NC 27705
(919) 471-4152

Video Programming Worksheets

1058 Proportional layout sheets for PC programming and screen displays. *(List Price: 100 sheets $4.95)*

Software Laborotories, Inc.
6924 Riverside Dr.
Dublin, OH 43017
(800) 531-1309

copyrighted materia

Disk Drive Cover

1059 A black plastic cover that protects the disk drive from dirt and dust. A tight fit prevents harmful elements from entering the disk drive area. *(List Price: $8)*

Nat Hellmon III, Inc.
5951 Firestone Blvd.
South Gate, CA 90280

Printer Cover

1060 A polyester cover that fits the IBM MX-80 or MX-100 printer. Custom-made covers are also available. *(List Price: $39.95)*

Yuba River Interiors
P.O. Box 1307
Grass Valley, CA 95945
(916) 265-3780

Printer Pedestals

1061 Stands that feature an opening for bottom feed as well as rear feed and allow paper storage under the printer. They are available for 80-column and 132-column printers. *(List Price: for 80-column printer $29.95, for 132-column printer $49.95)*

RCB Designs
175 S. San Antonio Rd. #117
Los Altos, CA 94022
(415) 941-2246

Manual Rack

1062 An extruded black plastic manual rack with individual spacers to allow easy access to six manuals. *(List Price: $24)*

Nat Hellmon III, Inc.
5951 E. Firestone Blvd.
South Gate, CA 90280

Quick Reference Card

1063 One reference source that summarizes all the extensive PC manuals. All DOS and BASIC commands, with correct syntax and examples, are printed on a folding card. *(List Price: $3.95)*

ASTEC
223 Hunnewell St.
Needham, MA 02194
(617) 444-5551

Ribbon Reloads, Ribbon Cartridges

1064 Printer ribbons are available in black, red, blue, green, and brown to be used on MX-70, -80, and -100 printers. *(List Price: Reloads $3.95 black, $4.95 colors; cartridges, $10.95 black, $11.95 colors)*

BT Enterprises
171 Hawkins Rd.
Centereach, NY 11720
(516) 981-8568 voice, 588-5836 modem

System Carrying Case

1065 A molded, lightweight carrying case made from high-strength plastic with an aluminum frame. High-density foam padding holds the system unit, keyboard, disk box, and manuals in place for protection during transportation. *(List Price: $120)*

Tim Riordan & Associates
2555 E. Chapman Ave. #300
Fullerton, CA 92631
(714) 879-1010

Modular Furniture

1166 Modular computer furniture for the home or office. Details include a flipup panel with lock, cord drop space, end lower desk height for easy keyboard use. A choice is offered between walnut, oak, or laminate. *(List Price: $300–$1,000 each)*

North American Furniture Co., Inc.
10709 Wayzata Blvd.
Minnetonka, MN 55343
(612) 546-7222

Extension Cables

1067 A 3-foot, 5-pin din cable that connects the keyboard to CPU (keyboard extension cable). The monochrome monitor extension cable set includes a 3-foot, 9-pin monitor extension cable and a 3-foot power extension cable. *(List Price: Keyboard extension cable $35, monochrome monitor extension cable set $55)*

Computer-Mate, Inc.
1006 Hampshire Ln.
Richardson, TX 75080
(800) 442-4006 Texas, 527-3643
(214) 669-9370, (713) 491-6550

Computer-Mate Desk

1068 A desk with a large work area and protective recessed bay for CPU and disk drive. It features a master switch, wire support, cord drop space, rear air space, two roller drawers, and adjustable leg levelers. *(List Price: 4-foot model $399, 5-foot model $499)*

Computer-Mate, Inc.
1006 Hampshire Ln.
Richardson, TX 75080
(800) 442-4006 Texas, 527-3643
(214) 669-9370, (713) 491-6550

Printer Stand

1069 A stand that allows paper to be fed from under the printer, making room for used paper to stack up behind the printer. Available with an optional removable shelf for computer forms changes, the stand comes in several sizes for large printers. It is also available with a center slot for bottom-feed printers (large printers only). *(List Price: $29.95–$49.95)*

BT Enterprises
171 Hawkins Rd.
Centereach, NY 11720
(516) 981-8568 voice, 588-5836 modem

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Dealer inquiries invited.

Support

ACCESSORIES

Micro-Grip II

1070 A friction feed adapter for MX-70 and MX-80 printers. It does not disturb existing tractor feed capability. *(List Price: $39.95)*

Requires: Epson printer.

Micro-Grip, Ltd.
P.O. Box 4278
Norton AFB, CA 92409
(714) 864-6643

Printer "LEGGS"

1071 Printer legs that allow users to store paper underneath the Epson and IBM printer. The four legs take the place of the screws under the printer and can be installed in seconds, providing room for 3 inches of paper. *(List Price: $15)*

Requires: Epson MX-80 or IBM Matrix Printer.

Argus
P.O. Box 9777
Baltimore, MD 21204
(301) 321-8451

Orange Stand

1072 A stand that offers a divided surface for accommodating the PC. The keyboard rests 26 inches from the floor and the stand is approximately 32 inches wide and 30 inches deep in walnut wood grain. An optional document holder is also available. *(List Price: Stand only, $99; optional document holder $15)*

Orange Stand
P.O. Box 5385
Birmingham, AL 35207

PC Pedestal

1073 An accessory designed for IBM's Monochrome Display that allows the user to tilt and swivel the display to various viewing angles. The pedestal may be fastened to the work surface and matches the PC in style, color, and finish. The product may be used with the optional extension cable set. *(List Price: PC Pedestal $82.95, extension cable set $51.95)*

Requires: IBM Monochrome Display.

Curtis Manufacturing Company, Inc.
One Curtis Rd.
Winchester, NH 03470
(800) 824-7888, 852-7777 California, 824-7919 Alaska, Hawaii

Labels, Bumper Stickers

1074 Bumper stickers and labels with logos and slogans for PC owners. *(List Price: $1.29 each)*

MMIS
P.O. Box 9363
San Rafael, CA 94912

Maintenance Kits

1075 Six kits that allow cleaning and removal of contamination of disk drives and wheel-type elements, CRT screens, and keyboards read/write heads. The Antistatic Kit helps cut down on electrostatic buildup in computer equipment areas. The other five kits are Head-Cleaning, Element-Cleaning, Micro Maintenance, Tech Maintenance, and Video Display Cleaning. *(List Price: $5.95–$39.95)*

Innovative Computer Products
18360 Oxnard St.
Torzana, CA 91356
(213) 996-4911
TWX: 910-493-5964

Hardwood for Hardware

1076 All-wood worktables, shelves, and printer tables for personal computers in oak or birch hardwoods and wood veneers. The printer table comes on brass casters and may be ordered with or without a paper slot. Tables are typing height. Cherry and walnut are also available. *(List Price: 46-inch worktable $175, 46-inch worktable and shelf $195)*

Wood Works
11th and Haskell,
Rt. 2 Box 407
Lawrence, KS 66044
(913) 842-7797

Keyboard Dust Cover

1077 A dustcover made of rigid, smoked bronze plastic designed to protect the PC's keyboard. *(List Price: $12)*

Tim Riordan & Associates
2555 E. Chapman Ave. #300
Fullerton, CA 92631
(714) 879-1010

Carrying Cases

1078 A line of carrying cases designed to transport IBM PC components: keyboards, monitors, printers, and manuals. Each case provides dust-free storage and can be locked to prevent unauthorized access. *(List Price: P403 Matrix Printer Carrier $89, IB502 Monitor Carrier $99, CPU/Keyboard Carrier $129)*

Computer Case Company
5650 Indian Mound Ct.
Columbus, OH 43213
(800) 848-7548, (814) 868-9464

Disk Drive Cover

1079 A cover designed to protect the disk drive area from dirt and dust. The cover is made of black plastic. Its tight fit prevents hermful elements from entering the disk drive area. *(List Price: $8)*

Tim Riordon & Associates
2555 E. Chapman Ave. #300
Fullerton, CA 92631
(714) 879-1010

Antistatic Spray

1080 A liquid in a nonaerosol spray container that aliminates static electricity in the computer room. This spray leaves no residue and is not toxic or flammable. It will last 2 to 4 months on heavily used surfaces and 8 months or longar in less traveled areas. *(List Price: $8 per quart)*

ACL Inc.
1960 E. Devon Ave.
Elk Crove Village, IL 60007
(312) 981-9212

SERVICES

PC Custom Software

1081 A company that modifies existing software or creates software that meets the specific needs of the customer.

PC Custom Softwore
344 Lille Ave.
Son Leandro, CA 94577
(415) 568-6575

Automated Typesetting Service

1082 A service that allows PC users to send data to be typeset via talephone lines. Available are 200 typefaces in 138 sizes. A speciel computer-simulated typeface is also available for software documentation. Material can be sent via The Source, CompuServe, or Telex. *(List Price: $2 per 1,000 chorocters)*

Requires: Asynchronous or bisynchronous communications capability.

fntergrophics, Inc.
106-A S. Columbus St.
Alexondrio, VA 22314
(703) 683-9414
Source: TCN072

Davell Custom Software

1083 Custom software development for chemical engineering, accounting, and tax preparation applications.

Davell Custom Softwore
P.O. Box 4162
Clevelond, TN 37311
(615) 336-3055

Insurance Coverage

1084 A service far programmers or small consulting firms. It provides errors and omissions coverage up to $250,000 per claim, $10,000 all risk on the user's computer, and general liability. *(List Price: From $795 onnually)*

G. Barry Klein
(213) 986-0862
Source: TCV617

Word Processing Interface to Typesetting

1085 A service that enables users to send word processed manuals or books directly to a typesetter, eliminating rekeying. The company offers complete printing facilities suitable for documents over 200 pages.

Requires: Async card, modam, communications software.

George Craphics
650 Second St.
Son Froncisco, CA 94107
(415) 397-2400

Flagstaff Engineering

1086 A company specializing in implamenting real-tima applications using the PC. Customars can obtain a complete turnkey system including design, programming, custom hardwara, and on-site installation. Application programmars use assembly language to implament multitasking systems. Design engineers provide customized hardware cards, sensors, cables, and interface panels. The company has experience in telecommunications, energy management, plant floor control, time and attendance, and retail point of sale.

Flagstaff Engineering
2820 W. Darleen
Flagstoff, AZ 86001
(602) 774-3588

Software Search Service

1087 A service that searches advertisements for software packages and reports to the subscriber on software that fits his or her needs. It currently covers over 1,000 packages and plans to expand to 3,000 by 1983. *(List Price: $50, $2 per description)*

ATC Software
R. 2, Box 448
Estill Springs, TN 37330
(205) 837-4718

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San Ramon, Ca. 94583
(800) 227-2148 Toll Free
CA (415) 820-1256

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Support

SERVICES

Sofsearch

1088 A software locator service that supplies information from a data basa of over 15,000 products. Using a toll-free line, users request from one to five search categories. Reports ara usually generated within 48 hours. Subscribers raceive hard copy that is updated quarterly. Special, one-time reports are available, as well as software research for the mainframe and micro markets. *(List Price: Annuol subscription $145)*

CCS fncorporated
P.O. Box 5276
Son Antonio, TX 78201
(800) 531-5955, (512) 340-8735

Accelerated Computer Training

1089 Training courses designed to teach microcomputer operation and programming. The courses covar computer familiarization, word processing, electronic spreadsheets, accounting, program concapts and design, and BASIC and assembly language programming.

Accelerated Computer Training
12057 Jefferson Blvd.
Culver City, CA 90230
(213) 821-1245

Software Support Service

1090 Support services for software purchasers and developers. Produced and distributed are a wide selection of softwara packages that include languages, telecommunications, word processing, data management systems, and mailing list and financial accounting packages. A comprehansiva book series of intarest to *PC* and other microcomputer users is also distributed.

Available services include a telephone hot line providing technical service fiva days a week from 9 a.m. to 7 p.m. EST; a customer service department that provides facilities for mail, telephone, TWX, Telex, and personal sales; a network of offices in six countries including England, Frence, Japan, Switzerland, and West Germany; an export service that delivers software to six continants; an update service that offers current software enhancaments; and a guide that sets standards for software authors. *(List Price: No chorge with softwore purchase)*

Lifeboot Associotes
1651 Third Ave.
New York, NY 10028
(212) 860-0300
TWX: 710-581-2524
Telex: 640-693

Training Materials

1091 Videotapes that teach users how to unpack and plug in the *PC*, run diagnostics and use the line editor. Tapes also cover BASIC program writing, screen handling and fila handling subroutines, program function keys, and performance considerations. The use of formatted screen input and keyed files is illustrated. The system includes a sample file maintenance program on disk. Available in VHS and Beta formats. *(List Price: $385)*

Fogle Computing Corporation
P.O. Box 5166
Sportonburg, SC 29304
(803) 574-4950

Computer Training Centers

1092 Instructions and literature for nearly every popular computer. Contact Tom Palazzo or Bill Ginalski.

Compuguidonce Internotionol Training Centers, fnc.
3644 E. McDowell #208
Phoenix, AZ 85008
(602) 244-2791

Earle A. Chiles Microcomputer Center

1093 A microcomputer center at Portland State University that offers educational services including management seminars and user classes. Students and faculty have access to 11 IBM *PCs* for classwork, research projects, and text editing.

Eorle A. Chiles Microcomputing Center
School of Business Administration
Portlond Stote University
P.O. Box 751
Portlond, OR 97207
(503) 229-3711

PhoneSupport

1094 A toll-free telephone subscription service that resolves software and documentation questions for Information Unlimited Software, Inc. software packages. The subscription includes a periodic newsletter, free replacement of defective or damaged disks, and an after-hours answaring service. *(List Price: The cost is 20 percent of the suggested retoil price of the covered program)*

fnformotion Unlimited Softwore, Inc.
281 Arlington Ave.
Berkeley, CA 94707
(415) 525-9452

Electronic Software Publishing Network

1095 A network that provides access to a catalog of applications, system components, and Ada packages through TeleMail.

TeleSoft
10639 Roselle St.
Son Diego, CA 92121
(714) 457-2700

Alpha Computer Service

1196 Specialists in writing custom programs for the IBM PC. Programs are designed for personal, business, or scientific applications. Consultation is provided for more effective use of software and computer systams (Los Angeles area only).

Alpho Computer Service
P.O. Box 2517
Cypress, CA 90630
(714) 894-6808

CompuServe

1097 An information network that connects any personal computer or terminal with data bases stored on centralized mainframe computers. Services include shopping at home, electronic mail and banking, tracking stock performances, and accessing national and international news wires.

CompuSarva stores data on ovar 9,000 stock securitias updated throughout each trading day, and contains current and historical information on more than 40,000 stocks, bonds, and options. It allows subscribers to research a hots of subjects using the *CIS* reference library. The National Bulletin Board systam on *CIS* allows users to post messages that can be accessed by other subscribers.

The service offers technical and programming aids for personal computars. Users can purchase programs alectronically on the Software Exchange. Subscriptions include access to all services and information, a subscription to *Today* magazine, and subscriptions to the *Updote* newsletter. *(List Price: Startup fee with dumb terminol $19.95, connect rates (up to 300 baud) $5 per hour standord service, $22.50 per hour prime service. (Connect time is billed in 1-minute increments with o minimum of 1 minute per session) Standord service: 8 p.m. to 5 a.m. weekdays; all day Soturday, Sunday, and holidays; Prime service: 8 a.m. to 6 p.m. weekdays.*

Requires: Asynchronous communications adapter, modam, tarminal software.

CompuServe
fnformotion Service Division
5000 Arlington Centre Blvd.
P.O. Box 20212
Columbus, OH 43220
(614) 457-8650

Custom Programming Service

1098 Custom programming for a variaty of program neads. Fraa estimates are provided, but no bids are accepted unless accompanied by a detailed set of instructions. *(List Price: $35/hour plus expenses, such as telephone and postage)*

A. Eric Eastmon
620 W. 1950 North
West Bountiful, UT 84087
(801) 292-0664

Disk Duplicating Service

1099 A service that copies 5¼- or 8-inch, single- or double-sided diskettes. The diskettes are certified and guaranteed to exceed ANSI, CEMA, and ISO standards. They carry a lifetime warranty against defects in workmanship or materials. A minimum order of 100 copies per master is required.

Allenbach Industries
2101 Las Palmas, Ste. A
Carlsbad, CA 92008
(800) 854-1515, (714) 438-2258 collect in Californio
Telex: 194-561

Program Transfers

1100 BASIC programs written for the TRS-80 Model I are transferred to the PC. Users should send programs on cassette or disk and will receive a disk with the program on it which can load into the PC. Debugging of the transferred program is available at additional cost.

Requests must come from program authors or holders of copyright ownership. *(List Price: $15 including disk and shipping)*
Requires: 16K.

Solortek
RD#1, Box 255A
West Hurley, NY 12491

Used Equipment

1101 Acquisition and sale of used computer and peripheral equipment on a purchase or consignment basis.

Articulate Systems Inc.
P.O. Box 310
Coeur d'Alene, ID 83814
(208) 666-1511

IBM PC Software Interchange

1102 Software exchange in which subscribers can exchange softwara. *(List Price: Annual membership $30, information packet $3)*

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
(913) 843-5863

LXI Inc.

1103 Custom-designed software for business, personel finance, and graphics applications. Systems should have a minimum hardware configuration of 48K with one disk drive. *(List Price: From $125 including calls and manual)*

LXI Inc.
P.O. Box 3007
West Lafayette, IN 47906
(317) 463-5028

SMS Software Maintenance Service

1104 A maintenance service that offers minor program corrections, phone consultation, and on-site inspection of users' softwara systems.

Belling Computer Systems, Inc.
142-04 Boyside Ave.
Flushing, NY 11354
(212) 539-6500

Rams & Much Much More!

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PACK-RAM™ **$225.00 & up**

- Increase system memory up to 256KB.
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- Combination of RS232 serial port, a battery backed up real time clock and an optional parrallel printer port.

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PACK-COMM™ **$495.00**

- It will transform the PC into a Voice & Data Communication terminal even without operator's attention.
- Bell 103J compatible modem is optionally integrated on the card with auto answer & auto-dial capability.

PACK-HDK™ **$1,795.00**

- Externally provided 5 Mega Byte formated on line storage of either fixed disk or removable cartrige disk.
- Internal mounting models also available.
- Compatible to either PC-DOS or CP/M-86 operating systems.

All products use one card slot, burn-in tested, and carries 1 year warranty.

PERSONAL DATA SYSTEMS

1110 Wrigley Way • Milpitas • California 95035

(408) 262-7880 • (408) 947-4647

Marketing & Office Hrs.
Order Entry: 8 a.m. - 5 p.m.

After Hours:
7 a.m. - 8 a.m. & Sat.

Support

SERVICES

Comp*U*Star

1105 A discount, electronic shop-at-home service for home computer users and subscribers to interactive cable television systems. Users access the data base and view listings of more than 30,000 products from over 200 manufacturers. Products are discounted up to 40 percent below list price and include major appliances and athletic and home entertainment equipment. The service features home delivery, monthly listings of discounted bargains, consumer hints, and product evaluations. Comp*U*Star is accessible via a nationwide data communications network, Tymnet, or any two-way cable television network that operates as a data communications gateway. Warranties on all products. *(List Price: $25 membership fee; prime time 15¢ per minute, non-prime time 5¢ per minute)*

Requires: 48K, one disk drive, modem, communications—serial, asynchronous, ASCII.

Comp*U*Stor
777 Summer St.
Stamford, CT 06901
(203) 324-9261

Programming Service

1106 An organization that provides software for small business applications, specializing in programs for manufacturers' representatives engaged in selling. The programs are data base types with routines for cash flow predictions, sales records analysis, and accounting functions.

Programs for small machine shops are also available. Routines include job costing, machine scheduling, payroll, accounts payable, accounts receivable, and general ledger. Programs are connected to avoid multiple data inputs. *(List Price: Depends on clients' needs)*

Brennon Ventures Inc.
P.O. Box 1253
York, PA 17405

Freedom Network

1107 Network access to all electronic mail, Telex, TWX, International Telex, and Fax Gram services that convey messages between a variety of different terminals and devices. The network performs protocol conversion and speed throttling to eliminate incompatibility and provide real-time interconnection of previously incompatible protocols and speeds on both public and private networks.

Grophnet, Inc.
329 Alfred Ave.
Teaneck, NJ 07666
(800) 336-5100

The Source

1108 A communications network that enables users to access information librarias that store data on business, financial, scientific, public affairs, sports, educational, and other subject areas. The extensive data base also includes major news wires and newspapers, an entertainment library that contains 74 games, and 72 bulletin boards (users can place notices to buy and sell equipment or exchange ideas). Source users can receive news, transmit text, reproduce documents, or communicate information. The Source also includes a classified ad service. A Chat feature allows typewritten "conversations" with other subscribers, and SMAIL (Source Mail) allows subscribers to access a mailbox and 2,000-character storage bank. Subscribers can use Tha Source to program in languages such as BASIC and FORTRAN.

An advanced data base called Source Plus is available at additional cost. Source Plus features include commodity reports, a record of bills before Congress, and Comp*U*Star, an electronic department store. *(List Price: Initiol subscription costs $100 and moy be purchased from retoil computer stores or directly from The Source. The subscription is o one-time-only fee. Chorges for Source use ore based on connect time ond type of service accessed, with o $10 monthly minimum. Rates vory with time of day, from $4.25 on hour between midnight ond 7 o.m., to $18 on hour for prime-time use—7 o.m. to 6 p.m. Monday through Friday)*

Requires: 300 baud rate no parity, modem with full duplex, ASCII 8-bit code with one stop bit, RS-232-C interface, ability to emulate a dumb terminal.

Source Telecomputing Corporotion
1616 Anderson Rd.
McLeon, VA 22102
(703) 734-7500

CONSULTANTS

Agri Software Consulting

1109 Custom programming consulting for agricultural and small business communities.

106 Abbottsfield Rd.
Edmonton, Alberto
Conodo T5W 4S9
(403) 474-0732

Alston Group

1110 Consultation in accounting, manufacturing, marketing, engineering, and professional and educational systems. Services include documentation, technical writing, and user training.

P.O. Box 1557
Richordson, TX 75080
(214) 235-1631

G&G Engineering

1111 A system integration house that manufactures integrated, customized CompuPro-based development systems. Systems are primarily marketed for software developers and corporate clients rather than individual end users. Among the products offered are WordStor, *dBase II*, SuperColc, 8080 and 8088 translators, and CompuPro's 85/88 CPU. Users create 8088 source (written with a CP/M-80 editor or translated with Sorcim's TRANS-86), cross-assemble it (using Sorcim's ACT86), link the hexadecimal file, and translate it to the PC. G&G's 8085/8088 development systems support up to 1MB RAM, quad-density 5¼- and 8-inch floppies, plus 5¼-, 8-, and 14-inch hard disks. A 2-year phone exchange warranty is included on CompuPro components.

1922 Republic Ave.
Son Leondro, CA 94577
(415) 895-0798

Automation Counselors Ltd.

1112 Consultation services specializing in large mainframe to micro networks. Micros are interfaced to IBM, DEC, and AMDAHL, using TSO, CICS, and IMS.

Edword L. Blonski
218 Woshington St.
Ingleside, IL 60041
(312) 587-2008

B & L Computer Consultants

1113 Consultants compiling a list of IBM PC ownars. It will be released to softwara vendors and distributors of software for the IBM PC. Send name and address to be included on tha list.

226 S. Cole
P.O. Box 4232
Boise, ID 83704
(208) 377-8088

Centipede Computer Systems

1114 Programming of applications and softwara along with consulting and education for users of the PC and turnkey systems.

148 Beuloh St.
Son Francisco, CA 94117
(415) 668-3800

Business Problem Solvers

1115 Custom programming and packaged software ranging from thoroughbred handicapping to manufacturing inventory control.

250 Richords Rd. #245
Konsas City, MO 64116
(816) 471-8660

Instant Recall

1116 A consulting group specializing in systems analysis and custom software, information retrieval, expert systems, and scientific applications. Services include creating syntax charts for PC-Pascal. *(List Price: Syntox chorts $5.95)*

P.O. Box 30134
Bethesdo, MD 20814
(301) 530-0898

John J. Springfield

1117 An independant consultant whose services include in-house training in BASIC for novices and COBOL programmers, and designing custom systams and programs for business and educational institutions.

37 Porker St.
Newton Centre, MA 02159
(617) 969-5183

Info-Pros, Inc.

1118 Professional specialists for your IBM Personal Computer. System design and custom business applications for diskette and Winchestar-based systems. Design and implementation of telecommunications, distributed processing, and remote data collection networks.

2102 Business Center Dr. #132
Irvine, CA 92715
(714) 851-8975

Information Systems

1119 A consultation servica that provides softwara and hardware research, evaluation, and selection; customized software; system installation; education and training; and tela-communications.

P.O. Box 8700
Modison, WI 53708
(608) 274-1980

Wilcro Systems

1120 Consultants who specialize in utility development. Consulting is available for interfacing custom hardware and accessing special system functions.

P.O. Box 11208
Dallos, TX 75223
(214) 321-7049

Micro Personal Consulting

1121 Specializing in turnkey IBM PC systems for personal and business use. Services include hardware/software recommendations, PC tutoring, telecommunications, and networking. A variety of hardware and software products are available.

Bob Rice
9025 Willis Ave. #114
Ponoromo City, CA 91402
(213) 892-2057

Microsystems

1122 Consultation based on a cliant's specific business needs: systems selection, and acquisition of and training for computer systams and media conversion services. Tha company modifies commercially available software and integrates it with custom software for a business problem solution package.

7201 87th Ave. SE
Mercer Island, WA 98040
(206) 232-1513

Miller Microcomputer Services

1123 FORTH programming and system design. Consultants select hardware, interface peripherals, design major systems, or train others in the use of FORTH.

61 Lake Shore Rd.
Notick, MA 01760
(617) 653-6136

Expert Systems Inc.

1124 A consulting service presenting ongoing word processing, *VisiCalc*, and introduction to programming seminars and training. It also handles personal and professional financial managemant systems.

P.O. Box 345
Redmond, WA 98052
(206) 881-8970

Systems Design and Programming Services

1125 Consultants offering micro to mainframe systems and software services from concapt to implementation. Assistance includes davelopment of custom systams or application software, system and user requirement analysis, software conversion to IBM PC, user interface design, user training, and cost estimates.

F.A. Britt, P.E.
P.O. Box 536
Son Bruno, CA 94006
(415) 697-8262

Trendtech Corp.

1126 Consulting services for small companies including microcomputar selection, software recommandations, feasibility studies, custom software design, and programming.

William Letendre
Wayne, NJ 07474
(201) 694-8622

Cornerstone Software

1127 A company that aids customers in distributing software to existing customers and computer dealers. Customars send in a description of the program with details. An evaluation copy is preferred.

P.O. Box 5151
San Jose, CA 95150

Dahlstrom-Gilbert

1128 A consulting firm that provides software location and evaluation, system installation and training, and classes and seminars.

3415 Westminster #206
Dallas, TX 75205
(214) 361-4048

Personal Concepts

1129 Consulting, documentation preparation, system analysis, and other specialized services including configuration.

635 Wellsbury Way
Polo Alto, CA 94306

Dennis M. Nagel, Inc.

1130 Custom application of the PC, product devalopment, custom hardware/software design in communications, industrial control data acquisition, games, and other fields.

455 N.W. 35th St., Ste. D
Boco Roton, FL 33431
(305) 395-9515

Econocomp Services, Inc.

1131 Software consulting in applications for engineering and construction firms and a line of engineering software for the IBM PC. Included are structural, geotechnical, and hydraulics programs. Also offered ara cost estimating and requisitions programs for building contractors.

89 Stote St.
Guilford, CT 06437
(203) 453-4386

Proactive Systems

1132 A consultation service providing custom applications programming, and system design for planning, data analysis, and reporting.

505 Chonning Ave.
Polo Alto, CA 94301
(415) 326-2722

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Support

CONSULTANTS

QUNIX, UNIX Consulting

1133 A firm that offers software design, integration, and implementation, hardwara integration and design, system dafinition and design, distributed processing and natworks, user training and support, seminars, and manuals and books.

Quontum Softwore Systems, Inc.
7219 Sheo Ct.
San Jose, CA 95139
(408) 629-9402

Rambow Enterprises

1134 Consultant for engineers, architects, builders, and contractors with software support for cost controls, estimating, scheduling, and drafting.

7-480A I St.
Elmendorf AFB, AK 99506
(907) 753-2291

Robert J. Taylor and Associates

1135 A management consulting firm specializing in needs surveys, software searches, software creation/modification, system implementations, and training in manufacturing and distribution.

8023 Shody Grove
Houston, TX 77040
(713) 937-3592
Source: CL1838

Saul Lowitt, Ph.D.

1136 A medical school research scientist who writes custom scientific programs for biologists to handle data generated by experiments.

2131 Brookhaven Dr.
Sorosoto, FL 33579

Software Marketing

1137 Marketing expertise for software producars contemplating new product introduction. Consulting activities include market research, promotion, design, distribution, and financing.

55 Wheeler St.
Combridge, MA 02138
(617) 497-1200

Software Quality Associates

1138 A consultation service that designs and builds commercial and scientific application systems. The company also assists users with DOS, BASIC, and packaged software.

P.O. Box 50083
Polo Alto, CA 94303
(415) 324-8088, 321-4208

Norman Levinson

1139 A company that specializes in parsonal and professional financial management systems. Ongoing word processing, *VisiCalc*, and introduction to programming seminars and training are also available.

P.O. Box 345
Redmond, WA 98052
(206) 881-8970

PConsulting

1140 Custom applications in the fields of banking, insurance, real estate, stocks, bonds, investments, and corporate finance. Recommendations in hardware, software, and communications configuration.

4383 Glen Pl.
Minneapolis, MN 55424
(612) 927-5099

Shamrock Associates

1141 A company that provides consulting, system designs, and program product modifications for PC users. Tha company also offers custom modification of available software and markets client-written software.

545 S. Moin St.
West Hortford, CT 06110
(203) 561-2000

Triangle Systems

1142 A consulting service that provides application programming in Pascal and BASIC for data acquisition, networking, mass storage interfacing, data base implemantation, accounting, and inventory data structures. Local computar classes are available.

1690 Lane Ave.
Columbus, OH 43221
(614) 486-3527
CompuServe: 70645,217

Steve A. Miceli

1143 A specialist in applications programming and PC systems integration. Services also include tailoring custom systems for users and in-house developmant for FORTRAN, BASIC, and othar DOS applications.

3058 Bern Dr.
Laguno Beoch, CA 92651
(714) 770-5527

The Programming Shop

1144 Consultation and programming services to support networking, distributed processing, accounting, and structured application development for businesses.

1164 Umbarger Rd.
San Jose, CA 95121
(408) 226-2157

Light Software

1145 A software programming servica that performs scientific, statistical, and systems programming for the IBM PC.

P.O. Box 4982
Santa Fe, NM 87502
(505) 982-4049

Computer Systems Development

1146 Systams design and programming services for business organizations in the Memphis erea. Custom-designed software is developed, and consulting services in hardware purchasing end user training are also provided. Software programs include general ledger, accounts recaivable, end accounts payable packages. Tha accounts payeble and accounts recaivable packages interface with the general ledger. Other programs include a mail list and programmer's eids.

P.O. Box 34057
Memphis, TN 38134
(901) 386-5064

Management and Research Consultants

1147 Consultants specializing in computer systams, economatric modeling, forecasting and large-scale network feasibilty studies, and cabla talevision, telephone, and electric utility fields. The company currently offers a load and cost analysis package, e job accounting and budgeting program, and training programs in installation and implementation in both English and Spanish.

225 S. Meromec #105
St. Louis, MO 63105
(314) 725-6783
Smoil: TCU406

Manhattan Management Consulting Group

1148 Educating financial executives in the benefits of microcomputer technology. Product anhancamant assignmants customize cash management software and include consulting work that is not dependent on existing software. Consulting assignments include client float analyses, high-point study of cash management operations, and computer security audits. Client support services, cash management seminars, and technical product support services are available.

300 Mercer St. #26-0
New York, NY 10003
(212) 454-0970

Computer Tamers

1149 Engineers offering assistance and advice to businesses and professions. Programming services include troubleshooting, maintenance, customization, development, and program and data conversion. Equipment services include selection, user orientation, printer adaptation, and media transfer.

1514 Monhatton Beach Blvd.
Los Angeles, CA 90266
(213) 641-7110 ext. 312, 545-9482

Cook Compusystems

1150 Consultation services providing custom computer systems for churches, professionals, end businesses utilizing IBM and Seattle Computer components. Tha company is also a distributor for Scotch diskettes and Seattla Computar components.

309 Lincolnshire
Irving, TX 75061
(214) 253-6979

Cobb Associates

1151 Systems integration, consulting, training, and ongoing support in spreadsheat applications, accounting systems, and word processing. Includes assistance in evaluating, selecting, and installing software to meet specific user requlrements. Full support services provided for computarization including plenning, system selection, and installation training.

55 Wheeler St.
Cambridge, MA 02138
(617) 497-5643

Computer Consultants

1152 Consultants certified in CDP, CPA, end computer eudlt. Services include assistance with selection of new systems, modification of existing systams, and staff training.

P.O. Box 11034
Washington, DC 20008
(202) 966-2855

CATALOGS

IBM PC Software Catalog

1153 A catalog that lists programs, books, eveluations, and uses of the PC and PC-compatible products. Sections include electronic spreadsheets, word processing, and data base menagement.

UOI Company
15445 Venturo Blvd. #1092
Sherman Ooks, CA 91413

UCSD p-System Applications Catalog

1154 A catalog that informs SofTech Microsystems licensees and users ebout the variety of UCSD p-System-compatible applications available from independent software distributors. Applications listed in the catalog are available for use on various machines and for different versions of the UCSD p-System. The appropriate vendor must be contacted for specific hardware evailability. Products markated directly by SofTech are not included in the catalog.

SofTech Microsystems
9494 Block Mountain Rd.
San Diego, CA 92126
(714) 578-6105
TWX: 910-335-1594

Software Vendor Directory

1155 A reference tool that is organized into three main sections with four appendices. The first two sections give information on microcomputers and operating systems, and provide indexes to the third section. The third section lists the vendor's number, name, address, and talephone number, corporate officer or owner, hardware and softwere categories, and tradename when appropriate. A 6-month update service is available. *(List Price: $57.95 without updotes, $100 with two updotes)*

Micro-Software Services, Inc.
P.O. Box 482
Nyock, NY 10960
(914) 358-1340

The Catalog for Modern Times

1156 A comprehansive selection of hardware eccessories end softwere programs that is available free to IBM PC users.

Computer Specialties
1253 Broadway
El Cojon, CA 92103
(714) 579-8380

Software Desk Reference

1157 Over 200 descriptions of programs, books, periodicals, and accessories pertinent to the PC and many other microcomputer anvironments. *(List Price: No chorge)*

Lifeboot Associotes
1651 Third Ave.
New York, NY 10026
(212) 860-0300
TWX: 710-581-2524,
Telex: 640693

Support

CATALOGS

PC Software Cross-Reference

1158 An index of software currently available and operational on the IBM PC. It includes indexes and descriptions to locate software for business, engineering, games, utilities, graphics, and numerical analysis. *(List Price: $22.95)*

Associated Technology
Rt. 2, Box 448
Estill Springs, TN 37330
(205) 837-4718

BOOKS

The IBM Personal Computer: An Introduction to Programming and Applications

1159 Practical programming applications from mailing lists to graphics and games with simple, tutorial-style questions. Tha book includes en introduction to BASIC and Advanced BASIC, and an ovarview of VisiCalc. *By Larry Goldstein, Ph.D; (Robert J. Brody Company, Bowie, Morylond, 1982); hord $19.95, soft $14.95.*

Some Common BASIC Programs, IBM Personal Computer Edition

1160 A guide to 76 business and home managament programs. Subjects include finance, statistics, math, and home budgeting. Each program comes with a description, BASIC source code, and operating instructions. All have been tested and debugged. *By Peter M. Burke (OSBORNE/McCraw-Hill, Berkeley, 1982); 195 pages $14.95.*

Osborne CP/M User Guide, Second Edition

1161 The second edition of CP/M User Guide encompasses the newest CP/M developments, including CP/M-86. Written for users at all levels, it covers the history, technical aspects, and functions of CP/M, as well as the use of built-in and transient commands, assembly language utilities, high-level languages, and applications programs. It encompasses several CP/M derivatives including MP/M and CP/NET (the network-oriented operating system). Appendices list CP/M-compatible programs, command summaries, languages, and products. *By Thom Hogan (OSBORNE/McGraw-Hill, Berkeley, 1982); $15.95; 280 pages.*

IBM/PC Survivor's Manual

1162 A primer for the IBM PC that should accompany tha documentation IBM provides new owners. It is as elementary as teaching how to insert a floppy disk or describing the keyboard. Soma shortcuts are taught. The menual is divided into five step by step lessons: Inspecting the Hardware, Meating DOS, Booting Up, Putting DOS to Work, and Moving from DOS to BASIC.

When the reader finishes the manual, he or she should be ready to learn BASIC or use professionally written programs. The manual defines terms and is fully indexed. The author assumes the reader/user has two disk drives, DOS, and a monochroma display. *By John Sigmund Mayer (Mayer Associotes, Huntington, New York, 1982); 35 pages; $11.95.*

FORTRAN Coding Guide

1163 A guide that aids softwara departments in formalizing standard practices. It provides an aasily applied methodology that ensures the construciton of top-down programs that ara structured and easy to test and maintain. *(Associoted Technology, Estill Springs, Tennessee, 1982); 40 pages; $20.*

Learning IBM BASIC for the Personal Computer

1164 A book that covers the use of BASIC for the PC and shows readers how to start writing their own custom software. *By David A. Lien (CompuSoft Publishing, El Cojon, Californio, 1982); $19.95.*

DON'T (How To Care For Your Computer)

1165 A guide to computer and peripheral preservation that has advice on the computer, floppy disks, hard disks, the CRT terminal, printer tape units, software, and documentation. *By Rodnay Zaks, (Sybex, Berkeley, 1982); 222 pages; $11.95.*

Your First Computer

1166 A beginner's guide to small computers that includes selection criteria for computars, peripherals, languages, and application packages. *By Rodnay Zaks (Sybex, Berkeley, 1982); 264 pages; $8.95.*

BASIC For Business

1167 Sample BASIC programs that cover business applications such as salas raports, financial statements, graphs and charts, depreciation calculations, and cost/profit analyses. *By Douglas Hergert (Sybex, Berkeley, 1982); 224 pages; $12.95.*

Introduction to Word Processing

1168 A book that covers concepts common to all word processing systems. It analyzes all features in datail, from screens to scrolling to formatting, and delineates what to look for when purchasing hardware and software. *By Hol Clatzer (Sybex, Berkeley, 1982); $12.95.*

Introduction to Wordstar

1169 Step by step instructions for using Wordstar. The book includes information on editing copy, moving and delating blocks of text, checking copy for spelling accuracy, creating and marging files, on-screen formatting and designing special print effects. A dictionary of commands used in WordStar, SpellStor, and MailMerge is included. Every entry includes a diagram of the keys used to perform the command. *By Arthur Naimon (Sybex, Berkeley, 1982); 208 pages; $11.95.*

Practical BASIC Programs, IBM PC Edition

1170 A book that offers 40 useful programs at a cost of less than 50 cents each. Each program has been tested or debugged. Programs include financial management, math, checkbook reconciliation, and home budgeting. Each is presented with a description, sample run, practice problems, and BASIC source listing. *By David Wilson (OSBORNE/McGraw-Hill, Berkeley, 1982); 170 pages; $15.99.*

VisiCalc Applications

1171 Accounting and manegement programs ranging from financial statements to master budgets to modal pricing and investment strategies. *By Stonley R. Trost (Sybex, Berkeley, 1982); 200 pages; $11.95.*

BASIC Exercises for the IBM Personal Computer

1172 Fifty BASIC exarcises for the PC user. The book presents exercises in math, business, operations reseerch, games and statistics that gradually become more difficult. Each exercise has a statement and analysis of the problem, a solution with a flow chart, and a program with detailed commentary. *By J.P. Lamoiter (Sybex, Berkeley, 1982); 232 pages; $13.95.*

Introduction to Pascal

1173 Pascal features covered in detail, from basic definitions to complex data structures. An extensiva appendix presents listings of all symbols, key words, and rules of syntax. *By Rodnay Zaks (Sybex, Berkeley, 1982); 422 pages; $15.95.*

Discount Buyer's Guide to the PC

1174 Information on purchasing equipment directly from manufacturers. *(Micro Express, Newport Beach, California); $3*

87/88-Guide

1175 A guide designed as an introduction to the optional 8087 and the IBM MACRO Assembler. Intended as a reference for the IBM PC and a tutorial for assembly language programmers not familiar with the strongly typed and structured language used by the 8087/8088 family of processors. It has assembly language listings and includes a description of how to write Macros that call the 8087. *(MicroWare, Kingston, Massachusetts); $18.95.*

iAPX88 Book, iAPX86, 88 User's Manual, Introduction to ASM86, Component Data Catalog

1176 Literature on Intel's line of solid-state components, including descriptions of the 8088 microprocessor. The *iAPX88 Book* describes the 8088 microprocessor. The *iAPX86, 88 User's Manual* provides information on the 8088, 8087, and 8088 chips. *Introduction to ASM86* is for 8086 and 8088 assembly programmers. The *Component Data Catalog* gives reference information for Intel's line of solid-state components. *(Micro Match, Tujunga, California,* iAPX88 Book, 1981, *$12.95;* iAPX86, 88 User's Manual, 1981, *$15.95;* Introduction to ASM88, 1981, *$13.95;* Component Data Catalog, 1982, *$15.95)*

VisiCalc for the IBM Personal Computer

1177 A guide to running *VisiCalc* programs on the PC that provides machine-specific examples, solutions, and explanations on how *VisiCalc* programs interact with underlying files. By Edouard Desautels *(Wm. C. Brown Company Publishers, Dubuque, Iowa, 1982); $16.95;* 160 pages.

VisiCalc for Business

1178 Working modals for use with VisiCalc. It answers "what if" questions about budget, cash flow, break-even, forecasts, leases, depreciation, investments, inventory, loans, payroll, quotations, advertising, ratios, and statistics. By Douglas Cobb *(Que Corporation, Indianapolis, 1982); $14.95.*

Inside the IBM Personal Computer

1179 Supplements the IBM manuals for programming system DMA and interrupt controller. It provides information on design expansion; slot add-in boards; program add-in boards using BASIC, assembly language, and DOS; and using DOS and BIOS functions from user program add-in boards. *(Tenley Design, Washington, D.C.); $10.*

IBM Personal Computer Technical Reference Manual

1180 The manual discusses the PC and its operations in depth and detail. It is divided into three sections and includes many descriptive block and data flow diagrams. Section One is an overview of the hardware and reviews each component.

Section Two discusses and locates major components of the main system board. The section covers I/O channels, kayboard, casette and speaker interfaces, switches, power supply, and includes maps of I/O addresses and system memory. Also included are discussions on the monochrome display, the parallel printar adapter, and the color/graphics monitor adapter.

Section Three discusses ROM (read only memory), BIOS (basic input/output system), parametar passing, and interrupt vectors. Also included are five appendices comprising ROM and BIOS listings, assembly instructions, schematic circuitry diagrams, and tables listing symbols, keys, and characters with corresponding hex and decimal codes. *(IBM Corporation, Boca Raton, Florida); $49.95.*

Indexed By Mary Professional Catalog

1181 An index of available IBM PC softwara that is updated quarterly. Each entry is indexed alphabetically by application and vandor. It includes software descriptions, hardware requirements, operating requiremants, and warranty information. *(MegaBoe, Inc., Menlo Park, California, 1982); $10, four for $32.*

Inventory Management for Small Computers

1182 A book and software package that tracks inventory starting at the cash register. The program automatically posts sales arrivals; prepares purchase orders; analyses of activity; and reports sales, orders, physical inventory, and location. It features "Quick Registar," which prints sales invoices and updates inventory. Each record is approximately 80 characters long. By Chuck Atkinson *(Dilithium Press, Beaverton, Oregon, 1982); $16.95, $250* with disk.
Requires: 32K, one disk drive.

Your IBM Personal Computer: BASIC and Applications

1183 One of a series of over ten books designed to introduca and explain basic programming languages, machine functions, and user applications for beginning through moderately advanced users. Each text includes a broad range of examples, programs, and exercises to encourage familiarity with the PC. By Seymour V. Pollock *(CBS College Publishing, New York, 1982); $16.95.*

32 BASIC Programs for the IBM Personal Computer

1184 Programs include home uses, educational uses, games, graphics, and mathematics. By Tom Rugg and Phil Feldmon *(Dilithium Press, Beaverton, Oregon); $19.95, $48.95* with disk.

How To Get Started With MS-DOS

1185 A tutorial and overview of the PC for beginners. Sections include IBM hardware; files, records and disks; commands and utilities; backup procedures; lina editor; word processing; MS-DOS BASIC, tables and maps, error messages, and commands; BASIC commends; a glossary; and a comparison of CP/M and MS-DOS. By Carl Townsend *(Dilithium Press, Beaverton, Oregon, 1982); $13.95.*

32 VisiCalc Worksheets

1186 Thirty-two programs, including games and novelties, business applications, household applications, statistical analysis, end models. Users may either type the programs or order them on disk. By Ted Lewis *(Dilithium Press, Beaverton, Oregon, 1982); $19.95.*

Some Common BASIC Programs, IBM Personal Computer Edition

1187 Seventy-six practical programs on finance, statistics, homa budgeting, and organization. Each program has a functional description, BASIC source code, and operating instructions. All are fully documented, tested, debugged, and ready to use. By Peter M. Burke *(OSBORNE/McGraw-Hill, Berkeley, 1982); $14.99;* 195 poges.

The IBM Personal Computer

1188 The history of the PC along with features, applicatlons, and background on design characteristics. *(Tab Books, Blue Ridge Summit, PA); $17.95* hord, *$10.95 soft.*

Support

BOOKS

Practical Pascal Programs

1189 Forty UCSD Pascal programs covering finance, management decision, statistics, science, and math. The user's key in the supplied listings compile the program. The book includes instructions, sample runs, and practice problems. *By Greg Davidson (OSBORNE/McGraw-Hill, Berkeley); 192 pages; $15.99.*

Made Easy Series

1190 OSBORNE/McGrew-Hill has released a "Made Easy" series of publications for spreadsheets and word processing software packages. *VisiCalc Mode Easy* by David M. Castlewitz (160 pages) is a tutorial for *VisiCalc* usres. It includes sections on creating a *VisiCalc* model, commands and functions, and techniques for enhancing existing applications.

SuperCalc Mode Easy by Chris Wood (160 pages) is a tutorial for *SuperCalc* users that includes detailed descriptions of *SuperCalc* commands and functions and special programming tricks applied to specific problems.

WordStar Mode Easy by Walter A. Ettlin (125 pages) includes 14 accelarated lessons. Each lesson provides hands-on instruction and sample exercises on how to write business letters, legal documents, menuscripts, and sales reports. The book includes a detachable *WordStor* commend sheet. *(OSBORNE/McGraw-Hill, Berkeley).*

IBM Personal Computer Handbook

1191 A comprehensive guide and resource directory for PC users that includes word processing, networking and financial applications, deta base use, softwere development, and choosing the most appropriate system. The handbook also features reviews of hardwara and software and a resource directory for products and services. *Edited by Dzintar E. Dravnieks, et al (And/Or Press, Berkeley, 1982) $29.96 hard, $17.95 soft; 448 pages.*

Introduction to the UCSD p-System

1192 A book that explains how to use the p-System opereting system. It discusses how to edit, translate, and run a program, and how to optimize memory. A comprehensive appendix is included. *By Charles W. Grant and Jon Butah (Sybex, Berkeley, 1982); 250 pages; $14.95.*

IBM Personal Computer User's Guide

1193 A book with separate sections for novice and experienced PC users. For novices the book has a functional overview of PC hardware and software, e section outlining step-by-step operating instructions, explanations of the PC's internal operations, and tutorials in IBM BASIC. For the experienced PC user, sections cover advanced IBM BASIC programming, DOS, graphics and sound, and printar and I/O interfaces. A chaptar on troubla shooting and IBM's problem definition procedure is also included with appendices providing tables, DOS procedures, and additional resources. *By Lyle J. Graham (OSBORNE/McGraw-Hill, Berkeley, 1982); $16.95; 385 pages.*

VisiCalc: Home and Office Companion

1194 A compendium of 50 *VisiCalc* models including sampla printouts, narratives, and coordinete listings. Users can enter their own data or substitute labels or lists of entries to tailor models to their specific needs. They can also custom design new models using elgorithms snd modaling techniques. The models cover seven sreas, from loans to investments and general business and household eids. All models can also be entered on *SuperCalc*. *By David Castlewitz, Lawrence Chisausky, and Patricio Kronberg (OSBORNE/McGraw-Hill, Berkeley, 1982); $15.99; 182 poges.*

IBM PC Expansion and Software Guide

1195 Evaluations of over 300 products that can be used with the IBM PC. Separate sections include hard disk storage, expension boards, plenning tools, operating systems, and softwere. Included ere text and advartising. *By Chris DeVoney, Tom Henderson, Davie Reed, Doug Cobb (QUE Corporation, Indianopalis); $19.95.*

IBM's Personal Computer

1196 A three-section publlcation produced by a team of writers. Tha first section skatches the history of tha IBM Corporation and describes the PC hardware, peripherals, and software. The second section covers available software and gives brief evaluations of presently availabla packages. Section three covers various aspects of computar communications such as using the PC es a terminal for e meinframe and using The Source. Appendices include a list of BASIC commands, a list of softwere publishers, and a command-by-command comperison of PC-DOS end CP/M-86. *By Richard Summi, Chris DeVoney (QUE Corporatian, Indianopolis); $14.95.*

ADA Reference Manual, The ADA Programming Language, ADA, An Introduction

1197 ADA, a languaga devaloped by the Department of Defense for mainframe computers, combines features of the ALGOL and PASCAL lenguages. JANUS, by RR Software is a languaga based on ADA and adapted to microcomputing. *The ADA Reference Manual by the Department of Defense $10; The ADA Progremming Languaga by f.C. Pyle $17; ADA, An Introduction by H. Ledgard price not ovoilable. (Springer-Verlag, fnc., Secoucus, New Jersey).*

Using Your IBM Personal Computer

1198 A practical guide to computing in BASIC on the IBM Parsonal Computer. It shows you how to use tha keyboard, display screen, disk, and printer with packaged software, and teaches you how to program in BASIC. A complete reference of key information for programmers is included. *By Lon Poole (Howard W. Sams & Company Inc., Indianopolis, 1982); $16.95; 400 pages.*

Practical BASIC Programs, IBM P.C. Edition

1199 Forty fully documanted programs for business and home use. Programs range from financial management, math, end science, to checkbook reconciliation and home budgating. Each program is presented with a description, sample run, practice probiams, and BASIC sourca listings. *By David Wilson (OSBORNE/McGraw-Hill, Berkeley, 1982); $15.99; 170 pages.*

Some Common Pascal Programs

1200 Seventy-six programs on finance, management decisions, statistics, math, and science that have been tested and dabugged and ara ready for immediete use. Tha programs present an ovarview of Pascal and provide users with enough background to invent applications or modify existing programs to maet thair specific needs. All listings are accompanied by program descriptions and axamples. *By Greg Davidson (OSBORNE/McGraw-Hill, Berkeley, 1982); $14.99; 195 pages.*

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PERIODICALS

Softalk For the IBM Personal Computer

1201 A monthly magazina that is complimentary for 1 year to all owners of PCs in the United States, and $2 per copy to others. The magazine is geared to nontechnical readers and features "Beginner's Corner" for PC neophytes. Features and articles cover various aspects of the PC. Regular faatures include "Systam Notabook," a technical column, "Marketalk News," "Reviaws" (new products writaups), "Newspeak" (en overview), and "Bestsellars" (software hits).

Softolk Publishing Inc.
11021 Magnolio Blvd.
N. Hollywood, CA 91601
(213) 980-5074

Sourceview

1202 A publication that enalyzes software trends and reviews programs. Tha periodical provides a forum for new software companies interested in achieving distribution channals. *(List Price: Annuol subscription $15.)*

Sourceview
P.O. Box 578
Concord, CA 94522
(415) 680-0202

COMPendium

1203 A monthly periodical guide to the contents of computer publications. The bulk of the magazine consists of synopses of all noneditorial articles appearing in 20 major personai computar magazines (from *BYTE* to *TRS-80 Microcomputer News*) and of directories of book, hardwara, and software reviews found in those publications. It includes "Infoservice," classified advertising from user groups, newsletters and stores. *(List Price: Annual subscription $18, $20 in Canodo)*

Epicurious Publishing Company
P.O. Box 129
Lincolndale, NY 10540

MMSFORTH Newsletter

1204 A 16-page bimonthly nawslettar with topics such as beginning to advanced FORTH applications and theory. It also includes new MMS products and modifications. *(List Price: Annual subscription $10 for licensed users)*

Miller Microcomputer Services
61 Lake Shore Rd.
Natick, MA 01760
(617) 653-6136

W.P. News

1205 A bimonthly subscription newslatter on word processing for writers who work with computers. It includes equipment and softwara reviaws, intarviews with writers, book and product reviews, and articles on choosing and using word processors. *(List Price: Subscription $20, single issues $2, back issues $4)*

Word of Mouth Enterprises
1765 N. Highlond Ave. #306
Hollywood, CA 90028
(213) 854-4161
SOURCE: FT1793

SATN

1206 A bimonthly publication designed to give users of *VisiCalc* a greater range of application ideas end techniques. It includes tutorials, in-depth articles about *VisiCalc*, and problem solving techniques. *(List Price: Six issues $30)*

SATN Subscriptions
P.O. Box 815
Quincy, MA 02169

SuperNews

1207 Information for novice users that includes updates, new applications, and hints on using *SuperCalc*. *(List Price: Free to registered SuperCalc owners)*

SORCIM Corportion
405 Aldo Ave.
Sonto Clora, Co 95050
(408) 727-7634
Telex: 910-338-2003

Software/Hardware Directory and Reference Guide for the IBM Personal Computer

1208 A semiannual directory with updates published monthly. It includes columns on software, hardware, consulting services, supplies, retailers, and help wanted. Updates includa free listings of user groups, owners, and article reviews. *(List Price: One directory and six updotes $10)*

Sopano Micro Software
P.O. Box 748
Quincy, IL 62301

IBM Personal Computer Journal

1209 A monthly magazine thet publishes software and hardware reviews, new product announcements, and technical articies. Included is e readar's forum, a vendor directory, an owner information exchange section, and classified advertisements. *(List Price: Annual subscription $18, sample copy $2)*

CRC Publishing
10057 Commerce Ave., Dept. 1
Tujungo, CA 91042

Personal Computer Journal

1210 A monthly diskette-based magazine with quick reference cards, inserts for IBM manuals, and an illustrated journel. Each issue has eight documentad, ready to use programs including arcade games, filing systems, and graphics. *(List Price: Annuol subscription $85, individuol issues $10)*

Personal Computer Journol
W. 2317 Gorlond
Spokone, WA 99205

Dr. Dobb's Journal

1211 The July 1982 issua faatures a technical comparison of the operating systems for the IBM PC, MS-DOS, and CP/M-86. High-resolution graphics on the PC are discussed in another article which also inciudes a memory mep, graphics dump routine, and line genaratorsubroutine. Two PC word processors are reviawed. *(List Price: Annual subscription $25, each back issue $3.50)*

People's Computer Company
1263 El Camino Real
P.O. Box E
Menlo Pork, CA 94025
(415) 323-3111

Spreadsheet

1212 A bimonthly nawsletter published by InterCalc, an internationel organization of user groups that speciaiize in spreadsheet programs. Tha newsletter features tips, formulas, programs, and applications, as well as member-contributed articles. *(List Price: Annual membership $25 including Spreadsheat)*

InterCalc
P.O. Box 254
Scorsdole, NY 10583
(212) 362-3853, 581-6470

Support

PERIODICALS

Software Vendor Directory

1213 A research and referenca document that includes indexed listings for more than 1,800 software vendors, 123 hardware vendors, and 22 operating systams. The softwara vendors provida 12,300 products in 300 categories. The cross-referenced directory is published every 8 months and offers a subscription update service that supplies new editions at reasonebla rates. *(List Price: Single copy $57.95, Updote service $100)*

Micro-Softwore Services, Inc.
P.O. Box 482
Nyack, NY 10960
(914) 358-1340

Lifelines/The Software Magazine

1214 A monthly magazine that features news on recent products, product updates, comparisons, tips, and techniques for users. Also included are features intended to guide users before and after purchase. *(List Price: Annuol subscription $18 U.S., Conodo, Mexico; foreign $40; single issues $2.50.)*

Lifeboat Associates
1851 Third Ave.
New York, NY 10028
(212) 860-0300
TWX: 710-581-2524,
Telex: 640693

PC Perspectives Newsletter

1215 A monthly newsletter geared toward professional users. Applications of software and hardware associated with the PC are covered. Other topics include new products, new software, hardware technology, user experiences, general news, local computer networks, office and factory automation uses, and process control uses of tha PC. *(List Price: Annual subscription $195, Foreign $245)*

Architecture Technology Corporotion
P.O. Box 24344
Minneapolis, MN 55424
(612) 935-2035

Starware Personal Computer Products Buyer's Guide

1216 A monthly catalog with over 400 IBM PC-compatible products. The catalog includes books, furniture, hardware, and software. *(List Price: Annual subscription $12, single issues $1)*

Storwore, Inc.
1701 K. St. NW #800
Washington, D.C. 20006
(202) 466-7351

Personal Computer Age

1217 An application-oriented, monthly publication for computer novices and technical users. Includes tutorials, hardware/software reviews, monthly columns, application programs, and articles on business, lew, graphics, education, and music. *(List Price: Annual subscription $18)*

Personal Computer Age
10057 Commerce Ave.
Tujungo, CA 91042
(213) 352-7811

Computer Trader

1218 A monthly publication of classified and display edvertising for buying, selling, end trading computar equipment. Articles on the IBM PC ere included. *(List Price: Annual subscription $10, single copies $1)*

Computer Troder
Chet *Lambert, W4WDR*
1704 Som Dr.
Birmingham, AL 35235
(205) 854-0271

I.B. Magazette

1219 A netional user group and program exchanga. Each issua (on disk) will be mailed to the user who then copies and returns it with input on programs, questions, or other commants. *(List Price: Eoch issue $10)*

Requires: 48K, one disk driva.

I.B. Magazette
1306 Petroleum Tower
Shreveport, *LA 71101*
(318) 221-3334

DEALERS

Professional Micro Systems

1220 A manufacturer of 20MB and 40MB hard disks and distributor of software products by firms such as Sorcim, Accounting Plus, Integrated Accounting Systems, and MicroPro.

4000 MocArthur Blvd. #3000
Newport Beoch, CA 92660
(714) 851-8655, (702) 782-8105
Telex: 182-737

Red Baron Computer Products

1221 A company that sells printers from NEC, IDS, Epson, and Okidate with various available faatures and interfacas. All products come with the original manufacturer's warranty. Printers from Anadex, C. Itoh, Diablo, and QUME are also available, as wall as cable and printer options, printer stands, and ribbons.

1100 N. Tustin
Anaheim, CA 92806
(800) 854-8275
(714) 630-3322 Californio, Alasko, Hawoii

MLI Industries Inc.

1222 A dealarship that provides plug-ins and add-ons for tha IBM PC. It supplies mamory boards, disk drives, modulators, printers, hard disks, and software from many manufacturers, including Seattle Computer, Quadram, M & R, Tandon, and Smith-Corona.

50 Hunt St.
Wotertown, MA 02172
(617) 926-2055

Microhouse

1223 A company that carries software from VisiCorp, Innovative Software, Sorcim, IVS, end ISA end features MicroPro's Wordstor. Software from PBL Corp. and Oasis and mamory expansion boards by Quadram Corp. are also available.

P.O. Box 498
Bethlehem, PA 18016
(800) 523-9511, (215) 868-8219

PC Connection

1224 A mail-ordar firm for software and hardwara products. Software products includa Alpha Software, Comshare Target, Lifetree, MicroPro, and VisiCorp. Hardware products include Electrohome, Symtec, TG, and Xedex.

6 Mill St.
Morlow, NH 03456
(603) 446-3383

Personal Computer Software Specialists

1225 A retail dealer of software with a line davoted exclusivaly to the IBM PC. Write or cell for a current catalog of available software.

6531 Crown Blvd., Ste. 3A
Son Jose, *CA 95120*
(408) 997-5033

Personal Computing and Supplies

1226 A mail-order firm that carries Verbatim diskattes end cassettes, IBM disks and ribbons, Rock-Roy disk savers, MicroPro's *Wordstor*, and e line of computar furniture. Custom-designed software packages are also available.

P.O. Box 203
E. Amherst, NY 14051
(716) 688-9008

Strickly Software

1227 A company that seils softwere for tha PC from Peachtree, VisiCorp, MicroPro, InfoCom, and Continental Software.

P.O. Box 338
Gronville, OH 43023
(800) 848-5253

Vidon Systems

1228 A dealer/distributor that provides memory and combo boards by AST Research and Automated Businass Machines; hard disk drives by X-Comp; end software products from MicroPro, Digital Research, and othar manufacturers.

P.O. Box 1661
Sonto Ano, CA 92703
(714) 834-0532

Lifeboat Associates

1229 A dealer that carries a variety of software packages including languages, telecommunications, word processing, data management, mailing lists, and financial accounting programs.

1651 Third Ave.
New York, NY 10028
(212) 860-0300
TWX: 710-581-2524
Telex: 640693

The Bottom Line

1230 A company that offers printers by Okidata, NEC, IDS, Epson, Cantronics, and C. Itoh. Cables and interfaces are also available.

12 Johnson St.
Milford, NH 03055-0423
(603) 673-8857

Diamond Software Supply

1231 A company that supplies a variety of eccounting, word processing, data base management, text formatting, and communications software; spelling checkers and spreadsheets; games; hard disk drives; and add-on and conversion boards.

484 Lake Pork Ave. #123
Ooklond, CA 94610
(415) 893-7678

MicroCorp

1232 A dealer of hardware and software from IBM and othar major independent vendors, specializing in software-intensive products. Carried are such manufacturers as Seattle Computer and MicroPro.

913 Walnut St., P.O. Box Q
Philodelphio, PA 19107
(215) 827-7997
Source: TCM033
CompuServe: 70335,1027

Management Information Software

1233 A dealer thet carries a line of CP/M and PC-DOS software. Manufacturers include MicroPro, VisiCorp, Sorcim, and ISA.

475 Park Ave. South
New York, NY 10018
(212) 243-5485

Jack Strick & Associates

1234 A product lina that includes print screen graphics programs for the Epson printer, NEC monitors, and keyboard and disk covers.

949 S. Lake Dr.
Hollywood, FL 33019
(305) 925-7004

Visible Computer Supply Corp.

1235 A mail-order house that offars business software, megnetic media, computer furniture, business forms, and eccessories for tha IBM PC.

3626 Stern Dr.
St. Chorles, IL 60174
(800) 323-0628

VR Data Corp.

1236 A dealer for Epson, C. Itoh, and Centronics printers; Lexicon and D CAT modems; and Verbatim diskattes, internel drives, and hard disks.

777 Henderson Blvd.
Folcroft, PA 19032
(800) 345-8102
Telex: 845-124

The Wide World of Data Products

1237 A mail-order firm that carries a wide line of accessories and products ranging from 5¼-inch floppy disks by Scotch and Maxel to IBM disk magazines, floppy disk labels, and computer furniture.

200 Cleorbrook Rd.
Elmsford, NY 10523
(800) 431-1513, (914) 592-5510

Coosol, Inc.

1238 A company that sells computer systems, hardware, software, printers, end peripheral equipment. Software from Chang Labs, Denver Software, Designers Software, Sorcim, Information Unlimlted, and MicroPro are availeble. Game paddles, joy sticks, modems, RGB monitors, memory cards, and printars are also available.

P.O. Box 743
Anoheim, CA 92805
(714) 545-2218

Micro Business World Inc.

1239 A company that handles various microcomputer systems including Hewlatt Packard, Commodore, and Atari. Products include disk drives; printers from Epson, NEC, Okidata, Paper Tigar, and Diablo; monitors; terminals; expansion boards; modems; calculators; and telephone answering devices. Products come with a 1-year extended warranty.

18720 Oxnord #108
Torzono, CA 91356
(800) 423-5886, (213) 996-2252

Oakland Business Forms, Inc.

1240 A line of argonomic walnut and oak computer furniture work stations for the home, offica, or classroom. Products by Data-Leggatt, Health Sciance Products, and Computermate are available.

631 Montague Ave.
Son Leondro, CA 94577
(415) 895-8381

Computer Biz

1241 A dealership that offers products from Dysan, Verbatim, Tandon, Corvus, Davong, C. Itoh, Epson, NEC, Okidata, Comrex, Smith-Corona, Quadram, Sigma Design, Atari, Novation, Hayes, AnchorSignalman, Lexicon, Racaol-Vadic, Anderson-Jacobson, VisiCorp, Sorcim, MicroPro, Microsoft, Microstuf, Amdek, BMC, Sanyo, and USI.

4232 Monet Cir.
San Jose, CA 95136
(408) 281-8970

Don-El Computer Products

1242 A ratail and discount company specializing in accessories and software for the PC by phone and mail order. Products include memory cards, hard disks, printers, monltors, modems, and software.

3261 Michigon Ave.
Costo Meso, CA 92626
(714) 548-7481

DSR Electronics

1243 A company that offars trade-ins on software and also sells MicroPro's *WordStar* and *MoilMerge*. Trade-In credit is available for Information Unlimited's *Easywriter*.

P.O. Box 34413
West Bethesdo, MD 20817-0413
(301) 469-8101
Telex: 89-7423

Support

DEALERS

Aegis Systems

1244 A mail-order company that provides components for purchase or for upgrading systems. Among the products offered ara disk drive kits; NEC 8023 printers and cable kits; memory and communications boards; keyboard and monitor extension cables; and Epson, Okidata, and letter quelity printers, modems, monitors, and diskattes. Volume discounts are available.

202 W. Bennett St.
P.O. Box 401
Soline, MI 48178
(800) 521-0521, (313) 429-2678

Aerocomp

1245 A company that sells Epson MX-80 printers, disk drives, printer cables, Zenith monitors, and other products.

Redbird Airport, Bldg. 8
P.O. Box 24829
Dallas, TX 75224
(214) 337-4346

A J National

1246 A company that markets a line of PC-compatible products including expanded disk drive systems with quad-density double side, double-density double side, and double-density single side. Supporting software, chassis, power supplies, end cables for external C and D drives are available.

The disk drive systems feature expanded floppy disk capacity with no controller or cabla modifications and have up to 2.4 MB with four quad drives. The software supports the use of any memory above 64K as high-speed electronic disk. RGB color and high-resolution black and white monitors ara also available.

6124 Tuckermon Ln.
Rockville, MD 20852
(301) 530-6331

Industrial Engineering Services

1247 A company that sells multifunction memory expansion boards featuring serial and printer ports. The boards are expandabla to 256K. Kits are also availabla. Boards are installed and tested free if purchased with a 64K multifunction board. Products come with a 1-year warranty. Software is also offered.

P.O. Box 125
Northridge, CA 91328

Computer Media Products

1248 A dealer that carries equipment and accessories geared to the small-business user. The product line includas disk packs, floppy disks, furniture, terminal work stations, carrying cases, cassettes, and cards by firms such as Dysan, Datatech, Monarch Computer Products, and Swingline.

5482 Complex St.
Son Diego, CA 92123
(714) 565-7802, (602) 945-7405

Control Systems

1249 A company that manufactures RAM expansion boards, parallel ports, I/O ports, serial ports, and color graphics controllers. The company also acts as a systems warehouse and markets a Mitsubishi high-resolution 18-color monitor with TTL input. RAM boards come in 64K to 192K with parity, bus bar capacitors, and gold connectors.

2855 Anthony Ln.
Minneopolis, MN 55418
(612) 789-2421

Business Computer Products

1250 A mail-order firm that handles the full Mamorex storaga media lina of 5¼-inch and 8-inch disks, magnatic tapes, and disk packs including the Mamorex 5¼-inch, soft sector double-density, single-sided disk.

6828 N.E. Sondy
Portland, OR 97213
(503) 287-3517

Centrum Incorporated

1251 A microcomputer software and system house that sells both packaged and custom solutions to business problams. Turnkey systams, professionel services for planning, analysis, programming, installetion, and training are also availabla. Micro-networks and multiuser micros are among the available products.

810 First St. South #260
Hopkins, MN 55343
(612) 933-6300

Soft Supply, Inc.

1252 A software dealer that specializes in business software such as accounting systems, office productivity, word processing, spreadsheets, graphics, data management, and communications.

68 Middlesex Turnpike
Burlington, MA 01803
(617) 229-6061

Alamo Electronic Components, Inc.

1253 A company that carries a variety of printars, monitors, disk drives, diskettes, modems, memory boards, software, and supplies.

205 Castillon Way
Son Jose, CA 95119
(408) 578-1490

Apparat, Inc.

1254 A mail-order distributor for Epson printers, Amdek color monitors and disk drives, end its own products including a 64K hardware print spooler, which buffers 13 minutes of output at 80 cps.

A 3.5- by 8-inch wire-wrap prototype card holds 150 14-pin dips; a clock calendar features seconds, minutes, hours, day of week, date, month, and year with backup battery, leap year, and crystal time base features.

A PROM blaster programs most 1K to 4K EPROMs of 25XX and 27XX single or multivoltage software, personality modules, or read/write software. *(List Price: Print spooler $399, prototype card $29.95, clock colendar $129, PROM blaster $149)*

4401 S. Tomarac Pkwy.
Denver, CO 80237
(303) 741-1778

Arby Corporation

1255 Arby Corporation's Information Processing Center offers Quadram edd-on memory boards, 64K to 256K; e clock/calendar board; a parallel printer board; a serial RS-232-C async board; *Volkswriter* and *Spellguard* word processing packages; and external printer buffers (64K parallel-to-parallal, serial-to-parallal, and serial-to-serial).

Also offered are 40- or 80-track Tandon or CDC external floppy disk drives; 40-track, single- or double-sided internal floppy disk drives; and an external network controller.

Arby also offers Baby Blue, a hardware emulator board used to run 8-bit CP/M 2.2 programs on tha PC.

1617 A Massachusetts Ave.
Cambridge, MA 02138
(617) 864-5058

Midwest Computer Peripherals

1256 A distributor of PC-compatible disk drives such as tha Tandon TM Series 100-1, 100-2, and 100-4. Power supplies and drive cables are also available.

1467 S. Michigan Ave.
Chicago, IL 60605
(312) 987-1024

The Software Centre

1257 A microcomputar software retail outlet that offers e selection of business, home management, and antartainment programs as well as related books and magazines.

PC-compatible software is avallable from several companies including VisiCorp, Sorcim, Microstuf, MicroPro, Info Unlimited, ISM International, ISA, Detamost, Broderbund, end Infocom. The company also provides a bulletin board service, which provides a catalog of availeble items.

11768 W. Pico Blvd.
West Los Angeles, CA 90064
(213) 473-1136
Bulletin board: *(213) 479-3189*

800-Software

1258 Software packages at discount prices. Software from MicroPro, Fox end Geller, TCS Accounting, and Perfect Software is available.

185 Berry St. #6820
San Francisco, CA 94107
(800) 227-4587, 622-0678 (415) 974-5990

Starware

1259 A deeler of a variety of modems, printers, plotters, hard disks, and memory boards. It also offers special discounts to IBM PC user groups on products such as Maxell diskettes; Houston Instruments' plotters, digitizers, and supplies; and Tall Grass Technologies' TG-09 Interfece package.

Dept. P2
3901 Davis Pl. NW
Washington, DC 20007
(202) 466-7351

ASAP Computer Products

1260 Add-on products including an expansion chassis with e five-slot motherboard; e 256K board; e 8 or 12MB Winchester disk drive end controller; one or two 5¼-inch 48 or 96 TPI, singla- or double-sided, double-density floppy disk drives; 32K parallel printer buffer board; and up to 32K EPROM board.

1198 E. Willow St.
Signal Hill, CA 90806
(800) 421-7701, (213) 595-6431
(714) 891-2663

Atlantic Data Supply Corp.

1261 A company that sells software and peripheral equipment. Software programs include games, a PC training kit ("Starting from Zero"), and the company's own Programmer, which builds programs for nonprogrammers. Peripheral equipment includes a 13-inch composite BMC color monitor with plug-in cable.

1451 Highway 88 West
Brick, *NJ 08723*

John D. Owens Associates, Inc.

1262 A daalar specializing in hardwere, software, and supplies for the IBM PC. Manufacturers include Xedex, Microsoft, Corvus, Amdek, Epson, MicroPro, Sorcim, VisiCorp, and Condor.

12 Schubert St.
Stoten Island, NY 10305
(212) 448-6283, 448-2913, 448-6298

Las Colinas Computer Company

1263 A dealer of PC-compatible herdwere, software, supplies, end furnitura oriented for business users. Menufecturers include Okidata, NEC, VisiCorp, and MicroPro. IBM-trained personnel with strong business oriantations are available for followup support after sales.

728 Sam Hill
Irving, TX 75062
(214) 258-2051, 462-1442

National Integrated Software Services

1264 A software publisher and distributor specielizing in forecasting and financial planning and modeling. A support service is available for software purchased from the company or acquired through other suppliers.

8800 E. Arapohoe Rd.
Denver, CO 80112
(800) 525-7638, (303) 694-1994

Softsel Computer Products

1265 A dealer that distributes and merkets softwere to retailers. It also publishes a computer software catalog with listings of recreational and business programs. Tha catalog is divided into hardware compatibility sections with subsections in recreation, business, utilities, education programs, books, and miscellaneous categories. Included are listings for IBM PCs as well as other microcomputers: MicroPro, Microsoft, On-lina Systams, Sirius Software, end VisiCorp.

8295 S. La Cienego Blvd.
Inglewood, CA 90301
(800) 421-5770, 262-4242, (213) 670-9481

Micro Flash

1266 A meil-order company of softwere end peripherals that provides service before end after the sale.

120 Village Square #126
Orindo, *CA 94563*
(415) 680-1157

Network, Inc.

1267 A distributor of the *Volkswriter* word processor by Lifetree Software.

P.O. Box 2248
Berkeley, CA 94702
(415) 849-2665

IBM Service Centers

1268 Following is e list of IBM Service Division Repair Centers for tha PC. Users can call IBM at (800) 428-2569 to make inquiries about service contracts before contacting individual service centers. Users describe their problems and are given an "incident number" to use when contacting the IBM Service Center.

California:
1230 Oakmead Pkwy.
Sunnyvale, CA 94086

12501 Imperial Highway
Norwalk, CA 90650

2901 Peralta Oaks Court
Oekland, CA 94805

700 S. Flower
Los Angeles, CA 90017

425 Merket St.
San Francisco, CA 94105

Florida:
605 E. Robinson St.
Orlando, FL 32801

Georgia:
2890 Cumberland Pkwy.
Atlanta, GA 30339

Illinois:
33 N. Dearborn
Chicago, IL 60602

310 W. Madison Ave.
Chicago, IL 60680

2707 Butterfield Rd.
Oak Brook, IL 60521

Indiana:
Rural Route #5 Box 481
Greencastle, IN 48135

Maryland:
100 E. Pratt St.
Baltimore, MD 21202

Massachusetts:
7 Water St.
Boston, MA 02109

Michigan:
28200 Lahser Rd.
Southfield, MI 48037

Missouri:
2345 Grand Ave.
Kansas City, MO 64108

New Jersey:
321 Route 17
Peramus, NJ 07652

New York:
330 Madison Ave.
New York, NY 10017

And Then Some

FSEditor

1269 A full-screen text editor with block/line copy, move, insert, delete, print, end append. No data is lost due to power failures or disk full. A demonstration disk is available. *(List Price: $125)*

Requires: 64K, one disk drive, 80-column monitor.

Cypress Software, Inc.
P.O. Box 8715
Coral Springs, FL 33065
(305) 755-1513

Graphmagic

1270 A program that creates visual diagrams such as pie charts, line graphs, bar graphs, and scatter grams from mathematical data. It can be used alone or is compatible with the manufacturer's own *MatheMagic*, with *VisiCalc*, or any *DIF* file product. A menu-drive format, full storage and recall of data and graphs, full color capabilities, and full printer support are among the features provided with the program. It is designed for office, classroom, research facility, or home applications. *(List Price: $89.95)*

Requires: 64K, one disk drive.

International Software Marketing, Ltd.
120 E. Washington St. #421
University Bldg.
Syracuse, NY 13202
(315) 474-3400

Consultant's Edge

1271 A decision support product that allows the user to build menus to interface with *Micro-DSS/Finance* models. The program customizes these models to fit individual needs. *(List Price: $250)*

Requires. 128K, two disk drives, *Micro-DSS/Finance.*

Ferox Microsystems, Inc.
1701 N. Ft. Myer Drive, #611
Arlington, VA 22209
(800) 336-5496, (703) 641-0800

Stock Portfolio

1272 A stock portfolio maintenance program that keeps all transactions by company name and date. It prints an entire portfolio or transactions by month or year. *(List Price: $39.95)*

Requires: 64K, one disk drive, (printer optional).

N.F. Systems, Ltd.
P.O. Box 76363
Atlanta, GA 30358
(404) 252-3302
Source: TCK071

Budgetplan

1273 A software package that produces historical analysis reports, financial budgets, cash flow projections, and flexible budgets. The system requires no programming experience and is menu driven. It is compatible with any general ledger system. *(List Price: Not available)*

Requires: 48K, one disk drive, (printer recommended).

The Dangen Corporation
3815 W. 52 Terr.
Mission, KS 66205
(913) 432-0953

Material Requirements Planning

1274 A full MRP system that includes *Master Schedule, Bill of Material Processor, Material Requirements, Capacity Requirements Planning, Shop Floor Control, Capacity Control,* and *Financial Reporting. (List Price: Not available)*

Requires: 128K, one disk drive, one 5MB hard disk, printer.

A. Eric Eastmon
620 W. 1950 North
West Bountiful, UT 84087
(801) 292-0664

Stock Option Analyzer

1275 A series of programs designed to help investors evaluate a variety of option strategies. The programs calculate the number of days until expiration, annualized return, and breakeven points. Among the strategies analyzed are buying puts and calls, selling covered calls (allowable for Keogh and IRA), straddles, calendar spreads, bull spreads, bear spreads, vertical spreads, and diagonal spreads. *(List Price: $65)*

Requires: 64K, two disk drives.

Systems & Software
220 Redwood Highway
Mill Valley, CA 94941
(415) 331-5056

Sourceca$h

1276 A short-term borrowings portfolio management and reporting system that enables the corporate treasury to record and monitor commercial paper sales and maturities, lines of credit, revolving credit borrowings and repayments, grid note and term note takedowns and repayments, and letters of credit. The system can support multiple source of funds portfolios for multiple subsidiaries. *(List Price: $50,000)*

Requires: 64K, one floppy disk drive, one hard disk drive.

Monhottan Monagement Consulting Group
300 Mercer St. #26-0
New York, NY 10003
(212) 454-0970

Vestca$h

1277 A short-term investment portfolio management and reporting system that enables the corporate treasury to record and monitor its money market investments. It can help determina the optimal investment strategy. Corporate holdings can be segmented into multiple portfolios, and multiple subsidiaries can each hold portfolios. The user may produce various reports including the Maturity Calendar, Short-term Outstanding, Today's Trades, Confirmation Letters, Investment Activities, Daily Amortization, and Open Position Raports. *(List Price: $50,000)*

Requires: 64K, one floppy disk drive, one hard disk drive.

Monhottan Management Consulting Group
300 Mercer St. #26-0
New York, NY 10003
(212) 454-0970

Foreca$h

1278 A short-term forecasting system for high-variance subjects such as net cash, receipts, and disbursements. It develops forecasting algorithms automatically using the corporation's financial transaction data in its accounting systems, and assists in increasing tha productiva use of float by monitoring and adjusting lock box/zip code assignmants and by selectively mismatching corporate sources and uses of funds when spreads produce rate arbitrage opportunities. *(List Price: $75,000)*

Requires: 64K, one floppy disk drive, one hard disk driva.

Monhotton Monagement Consulting Group
300 Mercer St. #26-0
New York, NY 10003
(212) 454-0970

Professional Financial Planner/Asset Manager

1279 Business software that provides complete client file capabilities, investment and asset management, and performance tracking. It also includes proposal projections analysis, tax implications analysis, transaction and contact history, a critical task calendar and reminder system, a full financial plan report and custom reports generation. *(List Price: $1,500)*

Requires: 64K (128K recommended), two disk drives, parallel printer interfaca, DOS or CP/M-86.

Enhonced Technology Associotes
3929 Lynn Ave. South
Minneopolis, MN 55416
(612) 929-7889

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User Groups, Clubs, and Bulletin Boards

Finding a PC user nearest you.

User groups, clubs, and bulletin board services have been orgenized ecross the country to help PC owners find answers to questions and problems, provide information on the computer markat, and create an opportunity to meat other PC owners.

The following is a list of associations open to membership for all IBM PC enthusiasts. For your convenience, we have alphebetized groups by city under stata name. Asterisks refer to clubs that offer bulletin board service. At tha end of the list are bulletin boards that, to our knowledge, are independent of user groups.

Alabama

BIRMINCHAM USER GROUP
Chet Ellis
ComputerLand
215 W. Valley Ave.
Birminghem, AL 35209
(205) 942-8085

Alaska

ANGHORAGE USER GROUP
Mark Bolzern
ComputerLand
502 W. Northern Lights
Anchorage, AK 99503
(907) 272-1516

Arizona

THE PHOENIX PERSONAL COMPUTER CLUB
Fred Lynch
4700 N. Centrai #102
Phoenix, AZ 65012
(602) 266-6634

IBM PC IDEA EXGHANCE
Lisa May
United Systems Corporation
1074 E. Sandpiper Dr.
Tempe, AZ 85283
(602) 631-9363

IBM PC USER GROUP
Theresa Baudier
100 N. Stone Ave. #1100
Tucson, AZ 65701
(602) 622-4751

California

SAN DIEGO IBM USER CROUP
Tom Albright
4005 Isle Dr.
Carlsbad, CA 92008
(714) 434-1806

SAN DIEGO COMPUTER SOCIETY
John Field
1384 Caliente Loop
Chula Vista, CA 92010
(714) 421-9666

IBM PC USER CROUP
Lee Wersei
7255 Orchard Dr.
Gilroy, CA 95020

HUNTINCTON BEACH CROUP
Phil Root
6242 Moonfield Dr.
Huntington Beach, CA 92648
(714) 847-6369

UCSD P-SYSTEM USER SOCIETY
USUS, Inc.
P.O. Box 1146
La Jolla, CA 92038

L.A. USER CROUP
Neil Zachary
P.O. Box 4136
Los Angeles, CA 90026
(213) 937-1314

MODESTO USER GROUP
Liz Leedom
P.O. Box 1122
Modesto, CA 95353
(209) 578-2356

CUBIC COMPUTER CLUB
Pete Nelson
P.O. Box 80767
San Diego, CA 92138
(714) 453-4953

SAN FRANCISCO IBM PC USER CROUP
Alfred Goodwin
Software Center
4720 Geary St.
Sen Frencisco, CA 94118
(415) 751-2231

UNIVERSITY OF CALIFORNIA-
SAN FRANCISCO USER CROUP
Bruce Stegner
UCSF U-76
San Francisco, CA 94143
(415) 666-2974

SAN FRANCISCO PC CLUB
Max Brioski
1880 California St. #12
San Francisco, CA 94109
(415) 775-8882

BAY AREA USER GROUP
Christian Du Lac
P.O. Box 155
Sen Francisco, CA 94101
(415) 668-4647

SANTA BARBARA CITY COLLEGE
COMPUTER SCIENCE DEPARTMENT
Stu Swertz
721 Cliff Dr.
Santa Barbara, CA 93109
(805) 966-2919

SILICON VALLEY COMPUTER CLUB
Peter Harris
510 Lawrence Expressway
P.O. Box 886
Sunnyvale, CA 94086
(408) 246-9057

SAN FERNANDO VALLEY CLUB
Al Saavadra
4685 Morro Dr.
Woodland Hills, CA 91364
(213) 347-9495

Colorado

DENVER USER CROUP
Steve Leibson
4040 Greenbriar Blvd.
Boulder, CO 80303
(303) 494-4062

Connecticut

THE IBM PERSONAL COMPUTER USER CLUB
OF STAMFORD
Dave Foulger
69 River St.
New Cenean, CT 06640
(203) 966-9378

CENTRAL CONNECTICUT USER GROUP
Rich Paterson
ComputerLand
131 S. Main St.
West Hartford, CT 06110
(203) 561-1448

District of Columbia

IBMICRO
Mike Todd
1414-C Wright Cir.
Bolling AFB
Washington, DC 20338
(202) 433-4380

Florida

SARASOTA CHAPTER OF THE AUTUMN REVOLUTION
Saul Lowitt, Ph.D.
2131 Brookhaven Dr.
Sarasota, FL 33579
(613) 921-3230

Georgia

ATLANTA COMPUTER SOCIETY
Randy Bullard
2965 Atterberry Ct.
Decatur, GA 30033
(404) 634-9585

Hawaii

HAWAII IBM PC USER CROUP
Doug Long
1750 Kalakaua #3-168
Honolulu, HI 96828

Idaho

IDAHO PC USER CROUP
Bruce Burns
ComputerLand
687 S. Capitol Blvd.
Boise, ID 83702
(206) 344-5545

Illinois

AUTUMN CHAPTER USER CROUP
James L. Szafranski
5195 Castaway Ln.
Barrington, IL 60010
(312) 934-8133

Indiana

COMPUTERLAND USER CROUP
Susan Shields
ComputerLand
5450 N. Coldwater Rd.
Fort Wayna, IN 46825
(219) 483-8107

INDIANAPOLIS IBM USER GROUP
David Reed
6704 Hoover Rd.
Indianepolis, IN 46260
(317) 259-7892

IBM PC USER CLUB
Jo Spangler
Microbase Software, Inc.
P.O. Box 40353
Indianapolis, IN 48240
(317) 877-4304

SOUTH BEND PC CLUB
Thomas R. Lafree
19525 Clevelend Rd.
South Bend, IN 46637
(219) 277-3344

Iowa

CEDAR FALLS USER CROUP
Lee Ann Moore
Black Hawk Villaga Shopping Ctr.
Cedar Falls, IA 50613
(319) 277-1700

Kansas

TOPEKA LIBRARY USER CROUP
Becky Hinton
Topeka Public Library
1515 W. 10th St.
Topeka, KS 66604
(913) 233-2040

Louisiana

LOUISIANA IBM USER CLUB
Dante Pingenot
3517 19th St.
Metairie, LA 70002
(504) 588-4317

Maryland

I/O NEWS
c/o Deta Unlimited
9 Congrassional Ct.
Baltimore, MD 21220

LUTHERVILLE USER CROUP
Bob Roswell
1516 York Rd.
Lutherville, MD 21093
(301) 337-5555

WASHINGTON DC U6ER CROUP
Ted Landberg
13700 Beauwick Ct.
Silver Springs, MD 20906
(202) 275-2102

Massachusetts

MILLER MICROCOMPUTER SERVICES
61 Lake Shore Rd.
Natick, MA 01760
(617) 853-6136

BOSTON COMPUTER SOCIETY/IBM USER CROUP
Michael Rohrbach
P.O. Box 307
Wellesley Hills, MA 02161
(817) 235-8830

Minnesota

MINNEAPOLIS USER CROUP
Peter LeNeau
100 N. 8th St.
Minneapolis, MN 55403
(812) 339-3233

New Jersey

THE NEW JERSEY PC USER CROUP
Bannett Landsman
2041 Harbour Dr.
Palmyra, NJ 08065
(609) 786-1441

*PERSONNA COMPUTER ASSOCIATION, INC. THE INT'L ASSOCIATION FOR USERS OF THE PC
Larry Collison
P.O. Box 759
Point Pleasant, NJ 08742
(201) 840-0300

New York

EAST COAST IBM CLUB
Richard Parker
ComputerLand
79 Westbury Ave.
Carle Place, NY 11514
(516) 742-2282

THE MANHATTAN IBM MICRO CLUB
Helaine Head
360 Central Park West
New York, NY 10025
(212) 222-9027

THE NEW YORK CITY CHAPTER OF THE ASSOCIATION FOR COMPUTINC MACHINERY
SYSDOC, Inc.
Joe Rigo
1385 York Ave.
New York, NY 10021
(212) 249-6418

NORTH AMERICAN AMATEUR COMPUTER CLUB
Brien Glasser
60 E. 9th St.
New York, NY 10003-8498
(212) 674-1185

NEW YORK PC CLUB
Irving Lang
7 W. 45th St.
New York, NY 10038
(212) 581-4667

THE LONC ISLAND COMPUTER ASSOCIATION
Marvin Freifeld
3 Lindron Ave.
Smithtown, NY 11787
(518) 724-0574

Ohio

OHIO IBM CLUB
Dr. Robert Bergholz
9529 Heather Ct.
Cincinnati, OH 45242
(513) 243-9298

Oklahoma

*AUTUMN REVOLUTION '81
Dan Perry
P.O. Box 55329
Tulsa, OK 74155
(600) 331-2347

Oregon

IBM PC USER GROUP
Rich Rohde
12260 S.W. 124th St.
Tigard, OR 97223
(503) 620-6862

Pennsylvania

PHILADELPHIA AREA IBM PERSONAL COMPUTER USER GROUP
Craig W. Uthe
4101 Spruce St.
Philadelphia, PA 19104
(215) 387-8206

INTERNATIONAL PERSONAL COMPUTER OWNERS
James B. Cookinham
I.P.C.O. Inc.
P.O. Box 10426
Pittsburgh, PA 15234
(412) 561-1857
CompuServe: 71545487

PENNSYLVANIA IBM GROUP
Ron Kester
1016 Greenlawn Dr.
Pittsburgh, PA 15218
(412) 341-2898

MICROCOMPUTER USER GROUP
215B Computer Bldg.
Pennsylvania State University
University Park, PA 16802

Tennessee

IBM PC USER GROUP
Ross Burrus
Science Applications, Inc.
Plaza Tower #601
Oak Ridge, TN 37630
(615) 482-8649

Texas

THE IBM CLUB
David Andraws
310 Honey Tree Ln.
Austin, TX 78748
(512) 327-0029

*THE BASIC SOCIETY
Kathy Ames
Drawer 345099
Dallas, TX 75234
(214) 464-9900

TEXAS USER GROUP
Rob Taylor
6023 Shady Grove
Houston, TX 77040
(713) 937-3592

DALLAS-FORT WORTH USER CLUB
Samuel P. Cook
309 Lincolnshire
Irving, TX 75061
(214) 253-6979

TEXAS USER GROUP
Ken Holcombe
178 Tipperary
San Antonio, TX 76223
(512) 333-7163

Utah

UTAH COMPUTERLAND
Dabby Williamson
ComputerLand
161 E. 200 South
Salt Lake City, UT 84111
(801) 384-4418

Virginia

IBM PC USER GROUP
Wesley K. Merchant
3277 Victor Cir.
Annandale, VA 22003
(703) 560-0979

THE CENTRAL VIRGINIA USER GROUP
Bob Dust
3130 Quail Hill Dr.
Midlothian, VA 23113
(604) 744-2387

RICHMOND VIRGINIA COMPUTER CLUB
Bob Minteer
P.O. Box 24685
Richmond, VA 23224
(804) 794-3954

Washington

THE PNW IBM USER GROUP
P.O. Box 3363
Bellevue, WA 98009

Canada

THE IBM USER GROUP OF TORONTO
Tony Bagshaw
P.O. Box 1376, Station B
Downsview, Ontario
Canada M3H 5V8

ALBERTA USER GROUP
Gerry Danan
106 Abbottsfield Rd.
Edmonton, Albarta
Canada T5W 4S9

BRITISH COLUMBIA USER GROUP
Warran McKay
#402-2536 Wark St.
Victoria, BC
Canada V8T 4G8

Bulletin Boards

The following is a list of bulletin boards that, to our knowledge, are independent of user groups.

Montana

IBM-PC BULLETIN BOARD SERVICE
George Peck
2324 Rahberg #30
Billings, MT 59102
(408) 856-9624

Open 24 hours a day, 7 days a week.

Ohio

COMPUSERVE
5000 Arlington Centre Blvd.
Columbus, OH 43220
(600) 846-6990

A bulletin board service and information for home financing programs, electronic mail, games, work space, newspapers, and the Associated Press Wire Service. It also includes User ID, password, and one free hour of user time. Cost: $20, $5 per hour of connect time.

Virginia

BULLETIN BOARD SERVICE
3277 Victor Cir.
Annandala, VA 22003
(703) 560-0979

A technical bulletin board open 24 hours a day, 7 days a week.

THE SOURCE
Source Telecomputing Corporation
1616 Anderson Rd.
McLean, VA 22102
(703) 821-6660

Anyone on-lina on The Source may post a messaga on tha PC Bulletin Board. Contents of the Bulletin Board include commercial edvertisements for software and hardware products; user messages about the PC; and tha PC Gozette, an electronic journal that monitors, edits, and classifies bulletin board items. Cost: $100.

IBM PC Dealer List By State

Dealer Name	Address	City	State/Zip	Phone
ComputerLand of Anchorage	502 W. Northern Lights Blvd.	Anchorage	AK 99503	(907) 272-1518
ComputerLand of Anniston	301 S. Quintard Ave.	Anniston	AL 36201	(205) 237-5600
ComputerLand of Birmingham	215 W. Valley Ave.	Birmingham	AL 35209	(205) 942-8085
Anderson Computers, Inc.	1626 Darby Dr.	Florence	AL 35630	(205) 767-4660
Anderson Computers, Inc.	3156 University Dr. NW	Huntsville	AL 35805	(205) 539-3444
Olensky Brothers Computers	3763 Airport Blvd.	Mobile	AL 36608	(205) 344-7448
ComputerLand of Mobile	3696 Airport Blvd.	Mobile	AL 36608	(205) 342-2540
ComputerLand of Little Rock	11121 Rodney Parham Rd.	Little Rock	AR 72212	(501) 224-4508
ComputerLand of Tempe-Mesa	1310 W. Southern #4	Mesa	AZ 85202	(602) 962-6732
Dataplace Computer Stores, Inc.	3424 N. Central Ave. #110	Phoenix	AZ 85012	(602) 266-6111
Photo & Sound Company	4246 E. Wood St. #560	Phoenix	AZ 85040	(602) 243-1753
ComputerLand of Phoenix	3152 E. Camelback Rd.	Phoenix	AZ 85018	(602) 956-5727
ComputerLand of Tucson	6177 E. Broadway	Tucson	AZ 85711	(602) 790-8220
ComputerLand of Bakersfield	3504 Ming Ave.	Bakersfield	CA 93309	(805) 832-5531
ComputerLand of Belmont	1625 El Camino Real	Belmont	CA 94002	(415) 595-4232
IBM Product Center	469 N. Bedford Dr.	Beverly Hills	CA 90210	(213) 859-0686
Computer City	2700 E. Imperial Hwy.	Brea	CA 92621	(714) 996-0800
ComputerLand of Burlingame	264 Lorton Ave.	Burlingame	CA 94010	(415) 348-7731
ComputerLand of San Diego North	2502 El Camino Real	Carlsbad	CA 92008	(714) 434-3300
Gateway Computer Center	11470 South Street	Cerritos	CA 90701	(714) 895-3931
ComputerLand of Concord	1701 Willow Pass Rd.	Concord	CA 94520	(415) 827-4985
Photo & Sound Company	3303 Harbor Blvd. E-1	Costa Mesa	CA 92626	(714) 540-3348
ComputerLand of Dublin	6743 Dublin Blvd.	Dublin	CA 94566	(415) 828-8090
ComputerLand of West Los Angeles	10600 Pico Blvd.	East Los Angeles	CA 90064	(213) 559-3353
ComputerLand of El Cerrito	10042 San Pablo Ave.	El Cerrito	CA 94530	(415) 527-8844
Photo & Sound Company	9956 Baldwin Pl.	El Monte	CA 91731	(213) 575-1924
ComputerLand of Solano		Fairfield	CA 94523	(707) 426-4003
ComputerLand of Fremont	3381 Walnut Ave	Fremont	CA 94536	(415) 794-9311
Photo & Sound Company	837 N. Fulton St.	Fresno	CA 93728	(209) 237-1001
ComputerLand of Glendale	243 N. Brand Blvd.	Glendale	CA 91203	(213) 246-2453
ComputerLand of Hayward	22634 Foothill Blvd.	Hayward	CA 94541	(415) 538-8080
Gateway Computer Center	15205 Springdale St.	Huntington Beach	CA 92649	(714) 895-3931
ComputerLand of San Diego East	7200 Parkway Dr. #104	La Mesa	CA 92041	(714) 464-5656
ComputerLand of Laguna Hills	24241 Avenida de la Carlota	Laguna Hills	CA 92653	(714) 859-8912
ComputerLand of South Bay	16720 S. Hawthorne Blvd.	Lawndale	CA 90260	(213) 371-7144
ComputerLand of Los Altos	4546 El Camino Real	Los Altos	CA 94022	(415) 941-8154
IBM Product Center	827 W. Sixth St.	Los Angeles	CA 90017	(213) 736-5067
Computer Ware, Inc.	1031 Fifteenth St.	Modesto	CA 95354	(209) 578-9739
ComputerLand of Santa Clarita Valley	23228 Lyons Ave.	Newhall	CA 91321	(805) 254-3121
ComputerLand of Newport Beach	4250-M Scott Dr.	Newport Beach	CA 92660	(714) 975-0953
ComputerLand of Oakland	366 Grand Ave.	Oakland	CA 94610	(415) 839-5230
ComputerLand of Pasadana	81 N. Lake St.	Pasadena	CA 91101	(213) 449-3205
ComputerLand of Redding	1175 Hilltop Dr.	Redding	CA 96001	(916) 241-7922
Photo & Sound Company	1791 Tribute Rd., Ste. A	Sacramento	CA 95815	(916) 920-2421
ComputerLand of Sacramento	1537 Howe Ave. #106	Sacramento	CA 95625	(916) 920-8981
ComputerLand of San Bernardino	289 E. Highland Ave.	San Bernardino	CA 92404	(714) 886-6838
Photo & Sound Company	7719 Convoy Ct.	San Diego	CA 92111	(714) 565-2345
ComputerLand of San Diego	4237 Convoy St.	San Diego	CA 92111	(714) 560-9912
IBM Product Center	199 Pine St.	San Francisco	CA 94111	(415) 545-5110
Photo & Sound Company	116 Natoma St.	San Francisco	CA 94105	(415) 421-0410
ComputerLand of San Francisco	117 Fremont St.	San Francisco	CA 94105	(415) 546-1592
ComputerLand of The Castro	2272 Market St.	San Francisco	CA 94114	(415) 864-8080
ComputerLand of S.F./Van Ness	1303 Van Ness Ave.	San Francisco	CA 94109	(415) 673-6640
RAC Computers, Inc.	1759 E. Capitol Expwy.	San Jose	CA 95121	(408) 274-1915
Photo & Sound Company	1425 Koll Cir. #110	San Jose	CA 95112	(408) 293-9610
ComputerLand of San Jose	1077 Saratoga-Sunnyvale Rd.	San Jose	CA 95129	(408) 253-8080
ComputerLand of Almaden	5035 Almaden Expwy.	San Jose	CA 95118	(408) 267-2162
ComputerLand of San Leandro	120 Juana Ave.	San Leandro	CA 94577	(415) 895-2620
ComputerLand of Marin	835 4th St.	San Rafael	CA 94901	(415) 459-1767
Computer City	3941 S. Bristol St.	Santa Ana	CA 92704	(714) 549-7749
ComputerLand of Santa Barbara	3850 N. State St.	Santa Barbara	CA 93101	(805) 967-0413
ComputerLand of Santa Clara Valley	2037 El Camino Real	Santa Clara	CA 95051	(408) 246-4500
ComputerLand of Santa Maria	223 S. Broadway	Santa Maria	CA 93454	(805) 928-1919
ComputerLand of Sonoma	611 5th St.	Santa Rosa	CA 95404	(707) 528-1775
ComputerLand of Stockton	4343 Pacific Ave. #A-1	Stockton	CA 95207	(209) 473-1241
IBM Product Center	1230 Oakmead Pkwy. #110	Sunnyvale	CA 94086	(415) 855-3210
ComputerLand of Thousand Oaks	171 E. Thousand Oaks Blvd.	Thousand Oaks	CA 91360	(805) 495-3554
ComputerLand of Torrance	3535 Torrance Blvd.	Torrance	CA 90503	(213) 543-2221
ComputerLand of Tustin	104 W. First St.	Tustin	CA 92680	(714) 544-0542
ComputerLand of Ventura	3875 Telegraph Rd.	Ventura	CA 93003	(805) 656-7711
ComputerLand of Visalia	1750 S. Mooney Blvd.	Visalia	CA 93277	(209) 739-1033
ComputerLand of Walnut Creek	1615 Ygnacio Valley Rd.	Walnut Creek	CA 94598	(415) 935-6502
ComputerLand of West Covina	853 S. Glendora Ave.	West Covina	CA 91790	(213) 960-6351
ComputerLand of San Fernando Valley	20812 Ventura Blvd.	Woodland Hills	CA 91367	(213) 716-7714
ComputerLand of North Denver	8749 Wadsworth Blvd.	Arvada	CO 80005	(303) 420-1877
ComputerLand of Colorado	695-A S. Broadway	Boulder	CO 80303	(303) 494-4443
ComputerLand of Colorado Springs	4543 Templeton Gap Rd.	Colorado Springs	CO 80916	(303) 574-4150
ComputerLand of Denver	2422 S. Colorado Blvd.	Denver	CO 80222	(303) 759-4685
ComputerLand of Englewood	6801 S. Dayton St.	Englewood	CO 80112	(303) 694-3083

Dealer Name	Address	City	State/Zip	Phone
ComputerLand of Fort Collins	2925 S. College Space II	Fort Collins	CO 80525	(303) 574-4150
ComputerLand of Western Colorado	644 Main St.	Grand Junction	CO 81501	(303) 245-2373
ComputerLand of Lakewood	858 S. Union	Lakewood	CO 80228	(303) 988-0883
ComputerLand of Danbury	76 West St.	Danbury	CT 06810	(203) 748-2300
ComputerLand of Feirfield	1700 Post Rd.	Fairfield	CT 06430	(203) 255-9252
ComputerLand of New Haven	60 Skiff St.	Hamden	CT 06517	(203) 288-5162
ComputerLand of Stamford	111 High Ridge Rd.	Stamford	CT 06905	(203) 964-1224
ComputerLand of Hartford	131 S. Main St.	W. Hartford	CT 06107	(203) 561-1446
Computerworks	1439 Post Rd. East	Westport	CT 06880	(203) 255-9096
IBM Product Center	919 18th St. NW	Washington	DC 20006	(202) 775-1500
ComputerLand of New Castle County	Astro Shopping Ctr., Kirkwood Hwy.	Newark	DE 19711	(302) 738-9658
ComputerLand of Orlando	237 W. Hwy. 436	Altamonte Springs	FL 32701	(305) 862-6202
ComputerLand of Boca Raton	500 E. Spanish River Blvd.	Boca Raton	FL 33432	(305) 368-1122
ComputerLand of Clearwater	3485 U.S. 19 North	Clearwater	FL 33515	(813) 785-5579
ComputerLand of Miami	274 Alhambra Cir.	Coral Gables	FL 33134	(305) 442-4112
ComputerLand of Fort Myers	5673 S. Tamiami Trail	Fort Myers	FL 33907	(813) 939-7800
ComputerLand of Ft. Lauderdale	3963 N. Federal Hwy.	Ft. Lauderdale	FL 33308	(305) 566-0776
ComputerLand of Jacksonville	2277-6 University Blvd.	Jacksonville	FL 32217	(904) 731-2471
ComputerLand of North Miami Beach	760 N.E. 167th St.	North Miami Beach	FL 33162	(305) 944-9699
IBM Product Center	605 E. Robinson St.	Orlando	FL 32802	(305) 849-9178
ComputerLand of Orange County	3808 E. Colonial Dr.	Orlando	FL 32803	
ComputerLand of Sarasota	7374 S. Tamiami Trail	Sarasota	FL 33581	(813) 921-7800
ComputerLand of St. Patersburg	9430 Seminole Blvd.	Seminole	FL 33542	(813) 397-7386
ComputerLand of Tallahassee	1815-6 Thomasville Rd.	Tallahassee	FL 32303	(904) 224-9341
ComputerLand of Tampa	1520 E. Fowler Ave.	Tampa	FL 33612	(813) 971-1680
ComputerLand of West Palm Beach	4275 Okeechobee Blvd.	West Palm Beach	FL 33409	(305) 684-3338
ComputerLand of Athens	P.O. Box 5398	Athens	GA 30604	(404) 548-5263
Compushop of Georgia	5600 Roswell Rd. NE	Atlanta	GA 30342	(404) 998-9120
Compushop of Georgia (service only)	8601 Dunwoody Pl. #140	Atlanta	CA 30338	(404) 998-9120
Compushop of Georgia	3350-B Chamble Tucker Rd.	Changlee	GA 30341	(404) 451-5498
ComputerLand of Atlanta	2423 Cobb Pkwy.	Smyrna	GA 30080	(404) 953-0406
ComputerLand of Hawaii—Aiea	4510 Salt Lake Blvd.	Aiea	HI 96818	(808) 487-0030
ComputerLand of Hawaii—Honolulu	567 S. King St. #132	Honolulu	HI 96813	(808) 521-8002
ComputerLand of Hawaii—Kaneohe	46-208 Kahuhipa St. #101	Kaneohe	HI 96744	(808) 247-8541
ComputerLand of Cedar Falls	Blackhawk Village Shopping Ctr.	Ceder Falls	IA 50613	(319) 277-1700
ComputerLand of Cedar Rapids	417 3rd Ave. SW	Cedar Rapids	IA 52404	(319) 363-3687
ComputerLand of Des Moines	7517 Douglas Ave.	Des Moines	IA 50322	(515) 270-8400
ComputerLand of Marion	3271 Armar Dr.	Marion	IA 52302	(319) 373-1241
ComputerLand of Boise	687 N. Capitol Blvd.	Boise	ID 83702	(208) 344-5545
Sears Business Systems Center	5 E. Golf Terr., Arlin. Golf Shop Ctr.	Arlington Heights	IL 60005	(312) 228-6330
ComputerLand of Arlington Heights	270 W. Rand Rd.	Arlington Heights	IL 60004	(312) 870-7500
Compushop, Inc.	1363 W. Dundee Rd.	Buffalo Grove	IL 60090	(312) 577-0600
ComputerLand of Champaign	505 S. Mattis Ave.	Champaign	IL 81820	(217) 359-0895
ComputerLand of Chicago Loop	37 S. La Salle St.	Chicago	IL 60606	(312) 782-7180
IBM Product Center	676 St. Clair	Chicago	IL 60611	(312) 245-7800
IBM Product Center	33 N. Dearborn St.	Chicago	IL 60602	(312) 245-4600
ComputerLand of Downers Grove	136 W. Ogden Ave.	Downers Grove	IL 60515	(312) 964-7762
ComputerLand of Elmhurst	192 N. York Rd.	Elmhurst	IL 60126	(312) 832-0075
ComputerLand of Evanston	818 Davis St.	Evanston	IL 60601	(312) 328-3535
ComputerLand of Joliet	3121 W. Jefferson St.	Joliet	IL 60435	(815) 741-3303
Compushop, Inc.	14403 S. Cicero Ave.	Midlothian	IL 60445	(312) 396-1020
Compushop, Inc.	5920 W. Dempster St.	Morton Grove	IL 60053	(312) 967-0450
ComputerLand of Mundelein	1500 S. Lake St.	Mundelein	IL 60060	(312) 949-1300
ComputerLand of Naperville	1565 N. Naperville Rd.	Naperville	IL 60540	(312) 369-3511
ComputerLand of Niles	9511 N. Milwaukee Ave.	Niles	IL 60648	(312) 967-1714
ComputerLand of Northbrook	3069 Dundee Rd.	Northbrook	IL 60062	(312) 272-4703
IBM Product Center	Oak Brook Ctr.	Oak Brook	IL 60521	(312) 655-3300
ComputerLand of Oak Lawn	10935 S. Cicero Ave.	Oak Lawn	IL 60453	(312) 422-8080
ComputerLand of Oak Park	965 Lake St.	Oak Park	IL 60301	(312) 383-1606
ComputerLand of Peoria	4507 N. Sterling	Peoria	IL 61615	(309) 688-6252
Compushop, Inc.	1219 E. Golf Rd.	Rolling Meadows	IL 60008	(312) 593-1800
ComputerLand of Schaumburg	1097 E. Golf Rd.	Schaumburg	IL 60195	(312) 843-7740
ComputerLand of St. Charles	2075 Prairie St.	St. Charles	IL 60174	(312) 377-7200
Sears Business Systems Center	100-7 E. Roosevelt Rd.	Villa Park	IL 60181	(312) 832-6820
ComputerLand of Anderson	1003 Meridian Plaza	Anderson	IN 46018	(317) 649-1122
General Microcomputer	1800 Osolo Rd. #4A	Elkhart	IN 46514	(219) 262-4519
ComputerLand of Evansville	725 S. Green River Rd.	Evansville	IN 47715	(812) 473-3303
ComputerLand of Fort Wayne	5450 N. Coldwater Rd.	Fort Wayne	IN 46825	(219) 483-8107
ComputerLand of Merrillville	19 W. 80th Pl.	Merrillville	IN 46410	(219) 769-8020
ComputerLand of South Bend	719 W. McKinley Ave.	Mishawaka	IN 46545	(219) 256-5688
General Microcomputer Inc.	52303 Emmons Rd. #11 W. Georgetown Ctr.	South Bend	IN 46637	(219) 277-4972
General Microcomputer Inc.	121 S. Niles	South Bend	IN 46601	(219) 233-7118
The Computer Room	6341 U.S. 23	South Bend	IN 46635	(219) 277-1600
ComputerLand of Hutchinson	2522 N. Main St.	Hutchinson	KS 67501	(318) 662-6832
ComputerLand of Lawrence	1420 W. 23rd St.	Lawrence	KS 66044	(913) 841-4611
ComputerLand of Overland Park	10049 Santa Fe Dr.	Overland Park	KS 66212	(913) 492-8882

Dealer Name	Address	City	State/Zip	Phone
ComputerLand of Topeka	911-A W. 37th St.	Topeka	KS 66611	(913) 267-6530
ComputerLand of Wichita	6100 E. Central	Wichita	KS 67208	(316) 684-3870
CBM	198 Moore Dr.	Lexington	KY 40503	(606) 276-1510
ComputerLand of Louisville	10414 Shelbyville Rd.	Louisville	KY 40223	(502) 245-8288
Computer Concepts	3216 Ryan St.	Lake Charles	LA 70601	(316) 439-5627
ComputerLand of New Orleans	3517 19th St.	Metairie	LA 70002	(504) 456-1438
ComputerLand of Louisiana	312 St. Charles Ave.	New Orleans	LA 70130	(504) 522-2255
IBM Product Center	7 Water St.	Boston	MA 02109	(617) 412-9180
ComputerLand of Boston II	60 Congress St.	Boston	MA 02109	(617) 482-6033
Sears Business Systems Center	54 Mall Rd., Executive Plaza IV	Burlington	MA 01803	(617) 229-2190
Entre Computer Center (J.D.G. Corp.)	331 State Rd.	North Dartmouth	MA 02747	(617) 997-3113
ComputerLand of Boston	214 Worcester St.	Wellesley	MA 02181	(617) 235-6252
ComputerLand of Annapolis	Parole Stetion, West St. and Rt. 2	Annapolis	MD 21401	(301) 266-6277
IBM Product Center	100 E. Pratt St.	Baltimore	MD 21202	(301) 332-2100
Frederick Computer Products, Inc.	5726 Industry Ln.	Frederick	MD 21701	(301) 694-8884
ComputerLand of Towson	1516 York Rd.	Lutherville	MD 21093	(301) 337-5555
ComputerLand of Rockville	451 Hungerford Dr. #109	Rockville	MD 20850	(301) 340-8484
ComputerLand of Maine	64 Exchange St.	Portland	ME 04101	(207) 774-1309
ComputerLand of Ann Arbor	3410 Washtenaw Ave.	Ann Arbor	MI 48104	(313) 973-7075
Computer Mart of Lansing	1331 E. Grand River	E. Lansing	MI 48823	(517) 351-1777
Computer Mart of Flint	915 S. Dort Hwy.	Flint	MI 48503	(313) 234-0161
The Computer Room	3740 28th St. SE	Grand Rapids	MI 49508	(616) 949-2802
The Computer Room	455 W. Michigan Ave.	Kalamazoo	MI 49007	(616) 343-4634
Computer Mart of Kalamazoo Valley	7428 S. Westnedge	Kalamazoo	MI 49002	(616) 329-1000
ComputerLand of Grand Rapids	2927 28th St. SE	Kentwood	MI 49508	(616) 942-2931
Computer Mart of Tri-Cities	3580 Bay Road	Saginaw	MI 48603	(517) 790-1360
ComputerLand of Southfield	29673 Northwestern Hwy.	Southfield	MI 48034	(313) 356-8111
ComputerLand of Grosse Point	22000 Greater Mack Ave.	St. Clair Shores	MI 48080	(313) 772-6540
Computer Mart, Inc.	1824 W. Maple Rd.	Troy	MI 48084	(313) 649-0910
ComputerLand of Bloomington	8070 Morgan Circle Dr.	Bloomington	MN 55431	(612) 884-1474
Computer Depot (Daytons Comp. Ctr.)	14251 Burnhaven Rd.	Burnsville	MN 55337	(612) 435-3466
Computer Depot (Daytons Comp. Ctr.)	6601 France Ave. South	Edina	MN 55435	(612) 375-4178
ComputerLand of Hopkins	11319 Highway 7	Hopkins	MN 55343	(612) 933-8822
Computer Depot (Daytons Comp. Ctr.)	700 Nicollet Mall	Minneapolis	MN 55402	(612) 375-2088
ComputerLand of Minneapolis	121 S. 8th St. #240	Minneapolis	MN 55402	(612) 333-3151
Computar Depot (Daytons Comp. Ctr.)	12411 Wayzata Blvd.	Minnetonka	MN 55343	(612) 375-5554
Computer Depot (Daytons Comp. Ctr.)	Hwy. 36 and Fairview Ave.	Roseville	MN 55113	(612) 375-6273
Computer Depot (Daytons St. Paul)	E. 7th St. and Cedar	St. Paul	MN 55101	
ComputerLand of St. Cloud	240 2nd Ave.	Waite Park	MN 56387	(612) 259-0590
ComputerLand of Gladstone	7636 N. Oak Traffic Way	Gladstone	MO 64116	(816) 436-3737
ComputerLand of Independence	1214 S. Noland Rd.	Independence	MO 64055	(816) 461-6502
ComputerLand of West County	1327 Manchester Rd., Carafiol Plaza	Manchester	MO 63011	(314) 227-8088
ComputerLand of St. Louis	11990 Dorsett Rd.	Maryland Heights	MO 63043	(314) 567-3291
Comp. Depot (Famous Barr Comp. Ctr)	801 N.W. Plaza	St. Ann	MO 63074	(314) 291-6404
ComputerLand of St. Joseph	2304 North Belt	St. Joseph	MO 64508	(816) 364-4498
Comp. Depot (Famous Barr Comp. Ctr.)	601 Ollve St.	St. Louis	MO 63101	(314) 241-5469
Photo & Sound Company	1970 Congressional Dr.	St. Louis	MO 63141	(314) 432-7190
ComputerLand of Mississippi	4328 N. State St.	Jackson	MS 39206	(601) 362-8754
ComputerLand of Billings	1827 Grand Ave.	Billings	MT 59102	(406) 259-0565
ComputerLand of Charlotte	3915 E. Independence Blvd.	Charlotte	NC 28205	(704)536-8500
ComputerLand of Durham	4125 Chapel Hill Blvd.	Durham	NC 27707	(919) 493-5402
ComputerLand of Bismerck	531 Airport Rd.	Bismarck	ND 58501	(701) 224-0008
ComputerLand of Fargo	3217 13th Ave. South	Fargo	ND 58103	(701) 237-3069
ComputerLand of Minot		Grand Forks	ND 58201	
ComputerLand of Grand Forks	2500-B S. Columbia Rd.	Grand Forks	ND 58201	(701) 746-0491
ComputerLand of Lincoln	701 N. 48th	Lincoln	NE 68504	(402) 467-5277
ComputerLand of Omaha	11031 Elm St.	Omaha	NE 68144	(402) 391-6716
ComputerLand of Nashua	419 Amherst St.	Nashua	NH 03063	(603) 889-5238
Entre Computer Center (Tkt. Inc.)	Rt. 517, Panther Valley Mall	Allamuchy	NJ 07820	(201) 850-8000
ComputerLand of Cherry Hill	1442 E. Route 70, Pine Tree Plaza	Cherry Hill	NJ 08034	(609) 795-5900
ComputerLand of Princeton	2940 Brunswick Pike	Lawrenceville	NJ 08648	(609) 882-1400
Vista Computer Center	76 Hwy. 34, Pine Valley Plaza	Matawan	NJ 07747	(201) 566-6066
ComputerLand of Morristown	74 Elm St.	Morristown	NJ 07960	(201) 539-4077
ComputerLand of Bergen County	35 Plaza, Route 4 West	Paramus	NJ 07652	(201) 845-9303
Computer Encounter	1225 State Hwy. 206	Princeton	NJ 08540	(609) 924-8757
ComputerLand of Totowa	225 Route 46	Totowa	NJ 07512	(201) 785-4448
ComputerLand of Albuquerque	2258 Wyoming N.E.	Albuquerque	NM 87112	(505) 294-2900
Photo & Sound Company	2820 Broadbent Pkwy., Ste. A	Albuquerque	NM 87107	(505) 345-8801
ComputerLand of Santa Fe	510 W. Cordova Rd.	Santa Fe	NM 87501	(505) 988-8800

Dealer Name	Address	City	State/Zip	Phone
ComputerLand of Las Vegas	1370 E. Flamingo Rd., Ste. K	Las Vegas	NV 89109	(702) 369-2001
ComputerLand of Reno	4914 S. Virginia St.	Reno	NV 89502	(702) 825-0378
ComputerLand of Buffalo	1612 Niagara Falls Blvd.	Buffalo	NY 14150	(716) 836-6511
ComputerLand of Nassau County	79 Westbury Ave.	Carle Place	NY 11514	(516) 742-2262
ComputerLand of Suffolk	6161 Jerricho Turnpike	Commack	NY 11725	(516) 499-4484
ComputerLand of Ithaca	419 W. Seneca St.	Ithaca	NY 14850	(607) 277-4888
ComputerLand of Little Neck	251-07 Northern Blvd.	Little Neck	NY 11362	(212) 423-5280
ComputerLand of Massene	46-50 Main St.	Massene	NY 13662	(315) 769-9971
ComputerLand of New York City	58 W. 44th St.	New York	NY 10036	(212) 840-3223
IBM Product Center	241 E. 42nd St. at 2nd Ave.	New York	NY 10017	(212) 239-3630
IBM Product Center	N. Tower Concourse, World Trade Ctr.	New York	NY 10048	(212) 239-3630
IBM Product Center	1441 Broadway at 41st St.	New York	NY 10016	(212) 239-3630
IBM Product Center	521 Fifth Ave. at 43rd St.	New York	NY 10017	(212) 223-3360
ASD Office Systems	P.O. Box 3210, Industry St.	Poughkeepsie	NY 12603	(914) 454-5084
ComputerLand of Rochester	900 Panorama Trail South	Rochester	NY 14625	(716) 586-0378
Computer Systems Specialists, Inc.	Imperial Plaza, 116 Rt. 9	Wappingers Falls	NY 12590	(914) 297-1478
ComputerLand of White Plains	600 N. Broadway	White Plains	NY 10603	(914) 328-0144
ComputerLand of Akron/Canton	4106 Beldon Village St.	Canton	OH 44716	(216) 493-7786
IBM Product Center	2 Fountain Square Plaza	Cincinnati	OH 45202	(513) 762-2989
ComputerLand of Downtown Cincinnati	19 W. Seventh St.	Cincinnati	OH 45242	(513) 381-3844
ComputerLand of N.E. Cincinnati	9873 Montgomery Rd.	Cincinnati	OH 45242	(513) 984-3721
IBM Product Center	1717 E. Ninth St.	Cleveland	OH 44114	(216) 664-7501
IBM Product Center	140 E. Town St.	Columbus	OH 43215	(614) 225-3500
Micro Center	1555 W. Lane Ave.	Columbus	OH 43221	(614) 481-8041
ComputerLand of Cleveland East	1288 SOM Center Rd.	Mayfield Heights	OH 44124	(216) 461-1200
ComputerLand of Dayton	17 Prestige Plaza	Miamisburg	OH 45342	(513) 439-1000
ComputerLand of Cleveland West	4579 Great Northern Blvd.	North Olmsted	OH 44070	(216) 777-1433
ComputerLand of Warren	2000 North Rd. SE	Warren	OH 44484	(216) 544-4191
ComputerLand of Oklahoma City	10621 N. May Ave.	Oklahome City	OK 73120	(405) 755-5200
ComputerLand of Crossroads	7812 S. Western	Oklahoma City	OK 73139	(405) 634-4300
ComputerLand of Tulsa	6191 S. Harvard	Tulsa	OK 74136	(916) 481-0332
NWI Audio Vis. Sys. (Photo & Sound)	820 N.W. 18th Ave.	Portland	OR 97209	(503) 224-3456
ComputerLand of Multnomah County	327 S.W. Morrison St.	Portland	OR 97204	(503) 295-1928
New Day Computing	421 S.W. Fifth Ave.	Portland	OR 97204	(503) 233-8033
ComputerLand of Salem	980 Lancaster Dr. NE	Salem	OR 97303	(503) 371-7070
ComputerLand of Portland	12020 S.W. Main St.	Tigard	OR 97223	(503) 620-6170
ComputerLand of Dresher	1650 Limekiln Pike	Dresher	PA 19025	(215) 542-8835
ComputerLand of Pittsburgh	5499 William Flynn Hwy.	Gibsonie	PA 15044	(412) 443-0690
ComputerLand of Lancaster	556 Centerville Rd.	Lancaster	PA 17601	(717) 898-3013
ComputerLand of Harrisburg	4644 Carlisle Pike	Mechanicsburg	PA 17055	(717) 763-1116
ComputerLand of Paoli	61 E. Lancaster Ave.	Paoli	PA 19301	(215) 296-0210
IBM Product Center	1714 Chestnut St.	Philadelphia	PA 19103	(215) 864-2401
ComputerLand of South Hills	429 Cochran Rd.	Pittsburgh	PA 15226	(412) 344-0690
ComputerLand of Lehigh Valley	1457 MacArthur Rd.	Whitehall	PA 18052	(215) 776-0202
ComputerLand of Providence	123 Dyer St.	Providence	RI 02903	(401) 274-5100
ComputerLand of Rock Hill	2423 Cherry Rd.	Rock Hill	SC 29730	(803) 324-2401
ComputerLand of Rapid City	738 St. Joe St.	Rapid City	SD 57701	(605) 348-5384
ComputerLand of Sioux Falls	3516 S. Western Ave.	Sioux Falls	SD 57105	(605) 338-5263
The Computer Shoppe	The Village at Rivergate	Goodletsville	TN 37072	(615) 859-4015
ComputerLand of Kingsport	2601 Fort Henry Dr.	Kingsport	TN 37664	(615) 246-6173
ComputerLand of Knoxville	8807 Kingston Pike	Knoxville	TN 37923	(615) 693-8225
ComputerLand of Memphis	4840 Poplar Ave.	Memphis	TN 38117	(901) 767-0233
Anderson Computers, Inc.	915 N.W. Broad St.	Murfreesboro	TN 37130	(615) 896-1600
The Computer Shoppe	3813 Hillsboro Rd.	Nashville	TN 37215	(615) 292-4496
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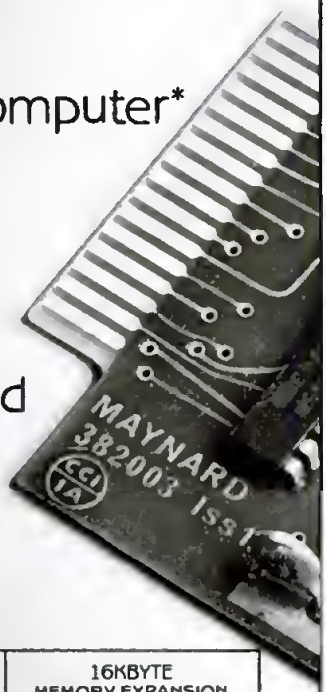

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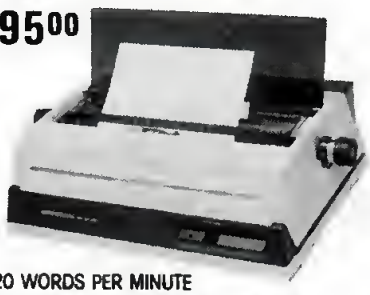

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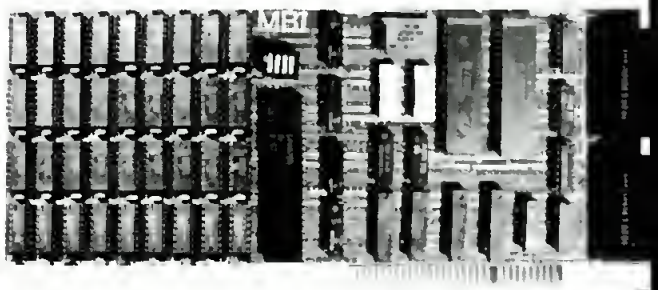

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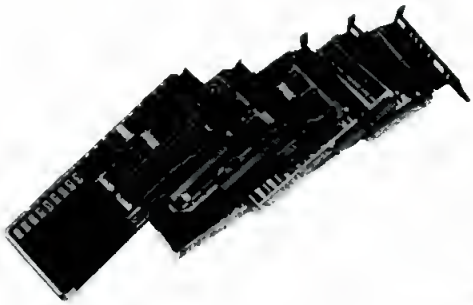

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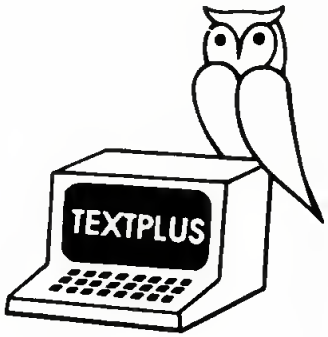

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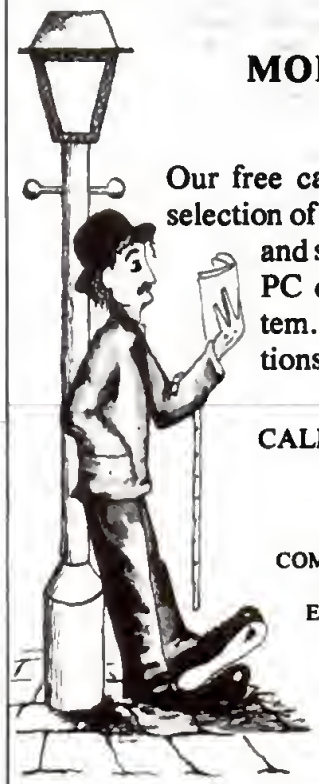

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Behind The Lines/Kathleen Burton

The inside story of the product guide

Publisher and Editor-In-Chief David Bunnell assigned e seemingly impossible project to PC's fledgling editorial staff: We were to compile a comprehansive product guide thet would list every compatible herdware and software product end support service available for the IBM PC. David had conceived the project some months earlier, wanting to debunk the myth that the PC was unsupported. The fruits of our research would be feetured in *PC*'s September 1982 issue, coinciding with the first anniversary of the IBM PC.

Our editorial department was in a state of flux. After putting out two issues, we'd outgrown our offices et 1528 Irving St. We'd gone monthly and we had to move. Within 3 days Managing Editor Susan R. Keller racreatad tha ad department. Sha compiled a list of over 1,000 manufacturers' names and coordinated a messive meiling, sending e letter requesting detailed product descriptions and price information about IBM PC-compatibla products. Six blocks from the main offica, we cnmmunicated via telephone. Editorial Assistant Cindy Hemburger, Staff Writer Susan Hurley, Editor Kearnay Reitmenn, and Production Coordinator Joe Metezzoni joined the project. "Welcome to *PC*" had hardly left our lips when the trickle of incoming press releases swalled to a deluge.

No two press releases were elike. Soma ware hand cerried by executives in town for the day while taxis idled outside. Others arrived on alegant paper with 8x10 photos neatly staplad to the backs. Soma were postcerd scrawls requiring the sleuthing of a Sherlock Holmas. One menufacturer described his weres as "better than sliced bread and *VisiCalc*."

Seth Novogrodsky joined our staff as technicel editor. His job was to wade through the hundreds of press releases, filtering out enything that wasn't PC-compatible. Later in the project Seth read every listing for technical accuracy.

By then the flow of press releases was criss-crossing the office like a ribbons on a maypole. The writers held technical writing rap sessions, encircling Seth's desk with files of manuscript questions.

Photograph: Jennifer Poitier

Staffers smile after the deluge.

Lunch was taken in shifts with someone always left behind to answer the insatiable phones. Lunches evolved into chop suey editing sessions. After lunch the office would become as quiet as a university library the day befora finals, with copy editors, proofreaders, and writers hunched over their desks, staring with tunnel vision at manuscript paper. By mid-afternoon, whila the telephone lines blinked on hold, Cindy fielded calls with the tact and eplomb of a diplomet, and by 3 o'clock the office end its ensuing din once again resemblad San Francisco an hour after the 49ers won the Super Bowl.

Manuscripts moved among boxes at every stege of production: one for non-PC-compatible products, one for press releases that raquirad mora information, one for copy editing, one for Technicel Consultent Doug Cobb, end finelly the one earmerked for the typesetter. The entire flow of meterials from prass relaase arrivel to copy editing took approximetely 3 weeks.

The monumental tesk of creating a style sheet end treining proofreaders fell to Copy Editor Evelyn Spire. To keap tha copy flowing through proper channels and to ensure that the forthcoming issues remained on schaduie, Evelyn meneged e free-lence staff of proofreaders.

We leughed, typed, dieled, read, and worked together in one big room. Like an air traffic controller during an LAX rush hour, Susan R. Keller surveyed tha process.

Design Director Brian Dessin Day and his art staff, and Jacqualine Poltier and her production department pulled out all the stops, put in double shifts, and burned the midnight oil to get the issue out. While the rest of San Francisco barbecuad, played video games, and want wine testing in the Napa Valley, we worked staadily against a deadline. Press releases floodad the office at tha rata of 50 a day. Manufacturers called to confirm receipt of their press releases. Many needed technicel questions enswered and missing information filled in.

Stending beck for a moment to teke en overview, we were tempted to extend tha deadline and take tha rest of the afternoon off. But the project had acquirad its own unstoppeble momentum.

The upshot is: Support for the IBM does exist */PC.*

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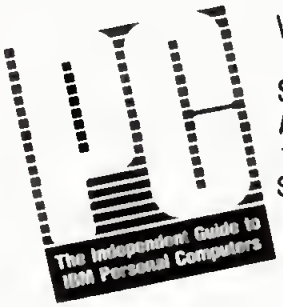

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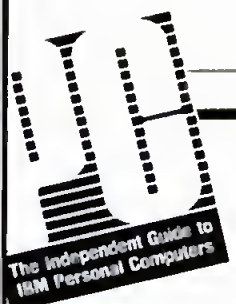

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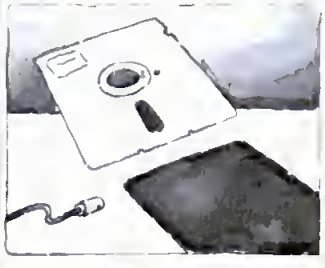

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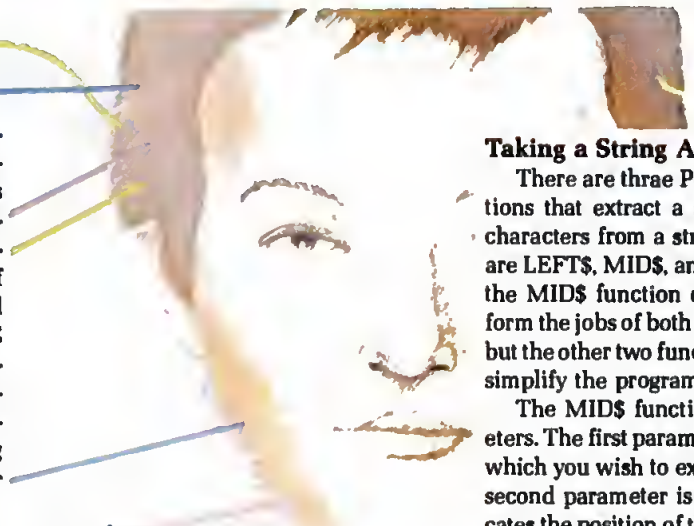
Beginner's Guide To Strings

nhancements to PC BASIC make using strings easy.



Ona of the nicer features of the BASIC language is its ability to manipulata characters as well as mbers. Character data is needed to pross names, telephone numbers, alphanueric part numbers, and so on. Groups of aracter data of this kind ara called trings." The string handling ability of PC ASIC is especially nice, thanks to enncements that are not part of the stanrd BASIC language. Most of these enncements ara in the form of string nctions, which receive strings as their guments or return string results.

Strings can taka one of two forms: They n be string constants or string variables. ring constants are most often found in RINT statements.

```
INT "One for the money."
```

he string constant is the data enclosed by uotation marks. Strings of this typa are ot usually manipulated by programs; nce the string never changes, manipulaon of the string will always yield the me result.

String variables, however, frequently sume unknown values. When a program rompts you to enter a name, for example, ere is no way for the program to know hat name will be entered or whethar tha lue entered is actually a name. Writing rograms that can cope with such unhowns is one of the toughest programing choras.

String variables are identified by a dolr-sign character ($) following the varible name. Following are some valid ring variable names.

```
TRING$
:
AME$
NGSTRINGYARIABLENAME$
```

Two Plus Two Is Not Four

The most elamentary string operation is string concatenation. Concatenation is the process of connecting two or more strings to form one long string. Although the same symbol is used for both numeric addition and string concatenation, the results are not the same. The following program accepts strings from the keyboard and continuously concatenates them.

```
10 A$="" ' A$ IS EMPTY
20 INPUT "Type a string:";X$
30 A$=A$+X$
40 PRINT A$
50 GOTO 20
```

Measuring Up

One frequently used string function is the LEN function, which returns the number of characters in a string. LEN requires only one argument—the string to be measured. The following program will prompt you to enter a string, and than tell you how many characters you entered.

```
10 INPUT "Enter a string:";ANS$
20 PRINT "You entered";LEN(ANS$);
   "characters."
```

Taking a String Apart

There are thrae PC BASIC string functions that extract a specified number of characters from a string. These functions are LEFT$, MID$, and RIGHT$. Actually, the MID$ function can be made to perform the jobs of both LEFT$ and RIGHT$, but the other two functions are provided to simplify the programmer's job.

The MID$ function has three parameters. The first parameter is the string from which you wish to extract characters. Tha second parameter is a number that indicates the position of the first charactar you wish to extract, and the third parameter is the number of characters to extract. In tha following program the word "for" will be extracted from the argument A$ and displayed on the screen.

```
10 A$="One for the money."
20 PRINT MID$(A$,5,3)
```

Note that when part of a string is extracted, the string itself remains unaffected. In this example program the value of A$ will always be "One for tha money,". The MID$ function returns a result that is the same as the characters that stand in the indicated position in the argument.

LEFT$ and RIGHT$ require only two parameters. The first parameter is the string from which to extract characters. The second is the number of characters to extract. The LEFT$ function returns the

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specified number of characters starting from the left side of the string, and RIGHT$ returns characters from the end of the string. The following program displays the first and the last five characters of the argument string CD$.

```
10 CD$="You can fool some of the people"
20 PRINT LEFT$(CD$,5)
30 PRINT RIGHT$(CD$,5)
```

The MID$ function is often used to examine a string character by character. The following program will search through a string you enter and tell you how many times the letter "E" occurs.

```
10 INPUT "Enter a string:";Z$
20 COUNT=0
30 FOR CHAR=1 TO LEN(Z$) ' EXAMINE EACH
CHARACTER
40 IF MID$(Z$,CHAR,1)="E" THEN 60 '
UPPERCASE E?
50 IF MID$(Z$,CHAR,1)<>"e" THEN 70 '
LOWERCASE?
60 COUNT = COUNT + 1
70 NEXT CHAR
80 PRINT "You typed the letter E";COUNT;
"times."
```

Strings to Numbers, Numbers to Strings

Although a string is composed of characters, they can still be numeric digits. Numbers stored as string data are not the same as numbers stored as numeric data. Before a number stored as a string can be used for a numeric calculation, it must be converted into numeric data. The conversion is done by the VAL function.

Following is a program that prompts you to enter a number or press [ENTER] to end the program. You could not stop the program by pressing [ENTER] if the INPUT statement used a numeric variable.

```
10 INPUT "Enter a number. Press ENTER to exit;";
ST$
20 IF LEN(ST$)=0 THEN 99
30 PRINT VAL(ST$)*10
40 GOTO 10
99 END
```

The STR$ function is the reverse of the VAL function; it converts a numeric value into a string. The following example uses the STR$ function to put the results of a calculation into a string.

```
10 INPUT "Enter a number:";R
20 X=R^2*3.1415926
30 ANS$="The answer is: "+STR$(X)+"."
```


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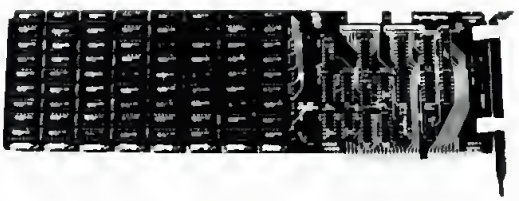

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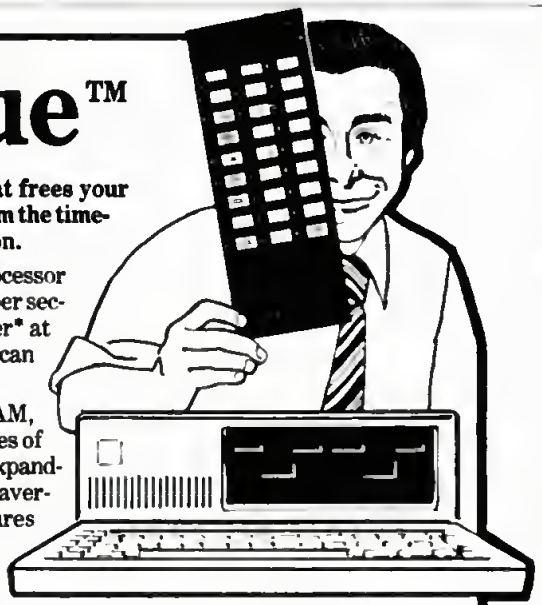

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A number must be converted to a string before it can become part of another string.

Secret Numbers

Every character on the PC has a unique internal number. These numbers are not unique to the PC, however. They are the same for almost every computer. These numbers are called ASCII codes. ASCII is an acronym for American Standard Code for Information Interchange. The ASC function converts a character into its ASCII code value. The following program accepts a string you type on the keyboard and displays the ASCII code for each character you enter.

WHEN USED with the ASC function, the CHR$ function can simplify many programming tasks.

```
10 INPUT "Enter a string:";S$
20 FOR J=1 to LEN(S$)
30 PRINT ASC(MID$(S$,J,1)):
40 NEXT J
```

ASCII codes for all characters on the PC are listed in Appendix G of the BASIC manual.

The CHR$ function is the opposite of the ASC function. The CHR$ function allows you to put special characters into programs (those that cannot be typed on the keyboard), and it is especially useful for sending control characters to printers and other devices. When used with the ASC function, the CHR$ function can simplify many programming tasks. Following is a program that converts characters in the input string into uppercase.

```
10 UC$=""
20 INPUT "Enter a string:";LC$
30 FOR C=1 TO LEN(LC$)
40 X=ASC(MID$(LC$,C,1))
50 IF X>96 AND X<123 THEN X=X-32
60 UC$=UC$+CHR$(X)
70 NEXT C
80 PRINT UC$
```

/PC

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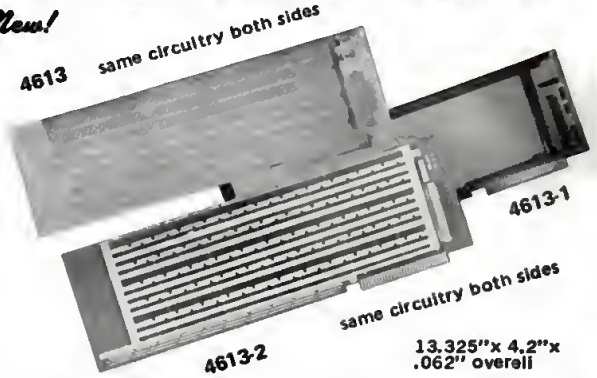

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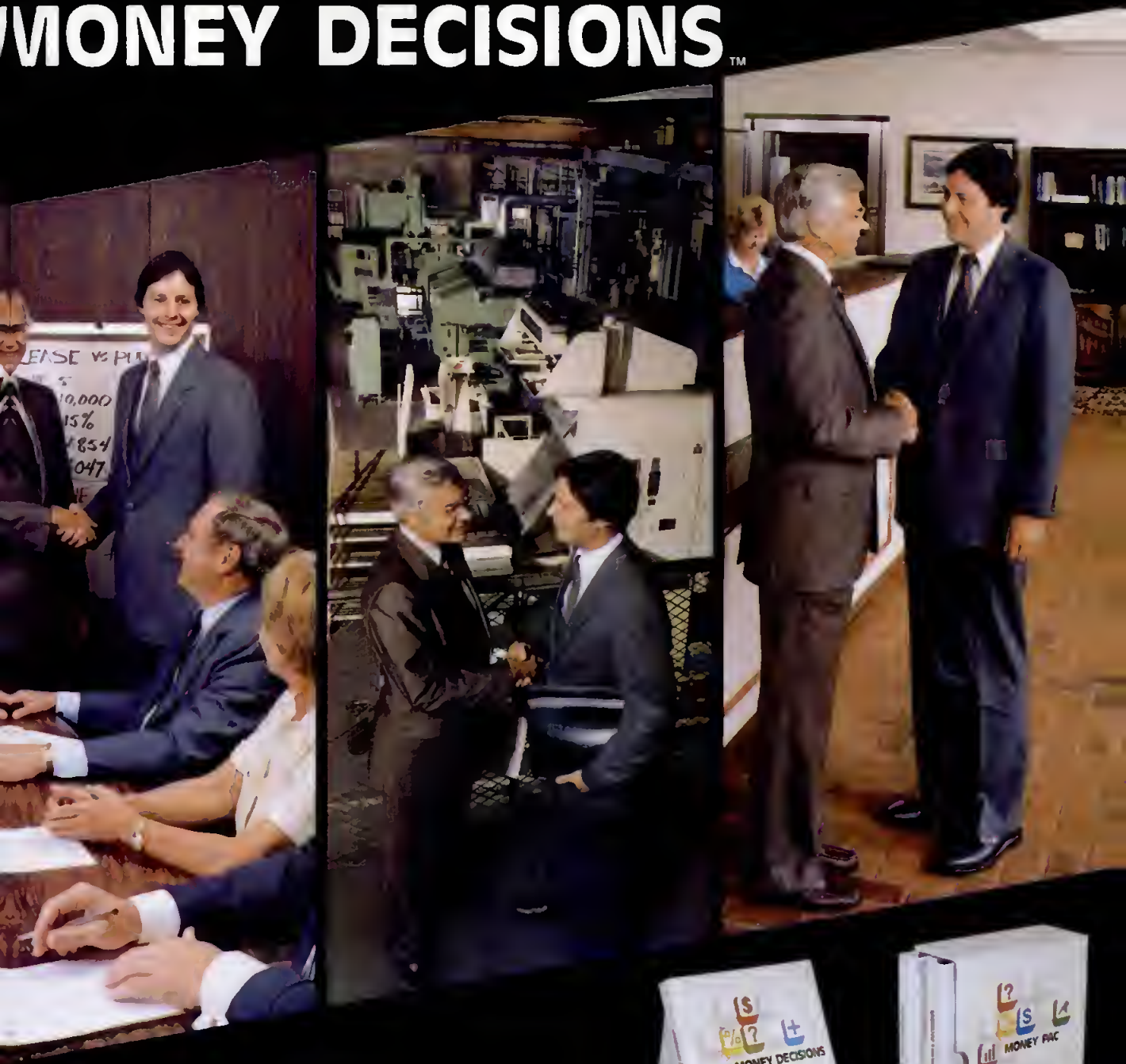

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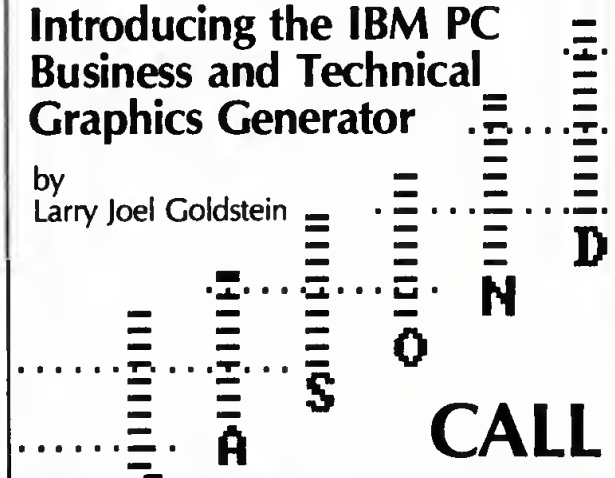

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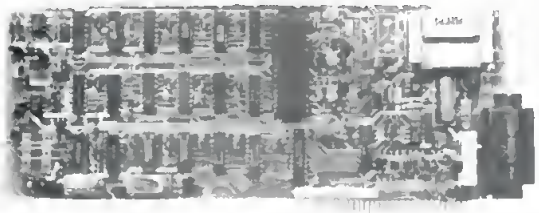

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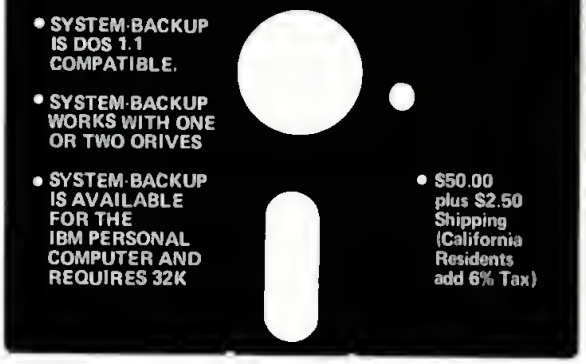

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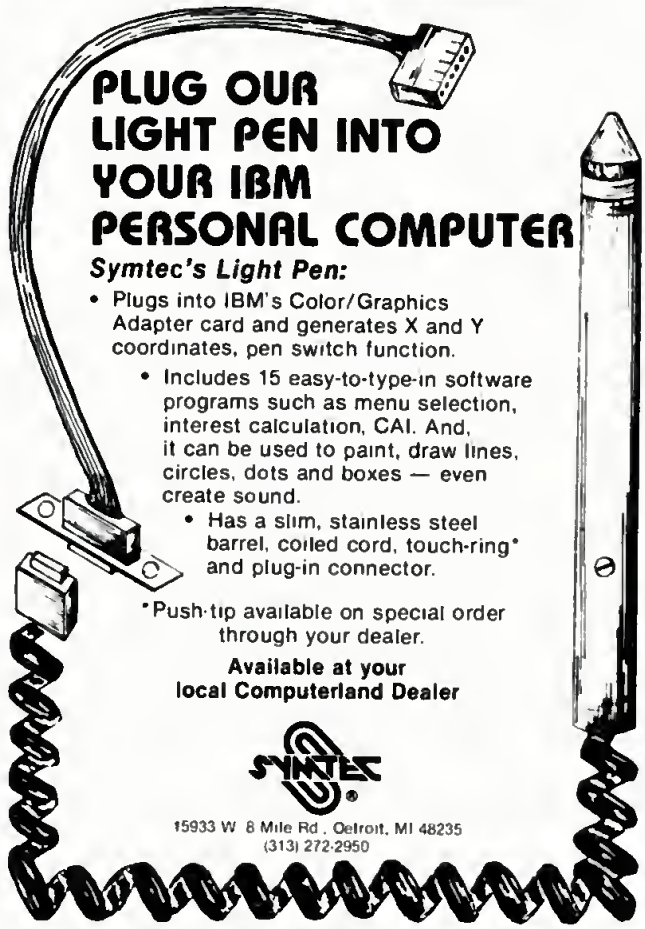

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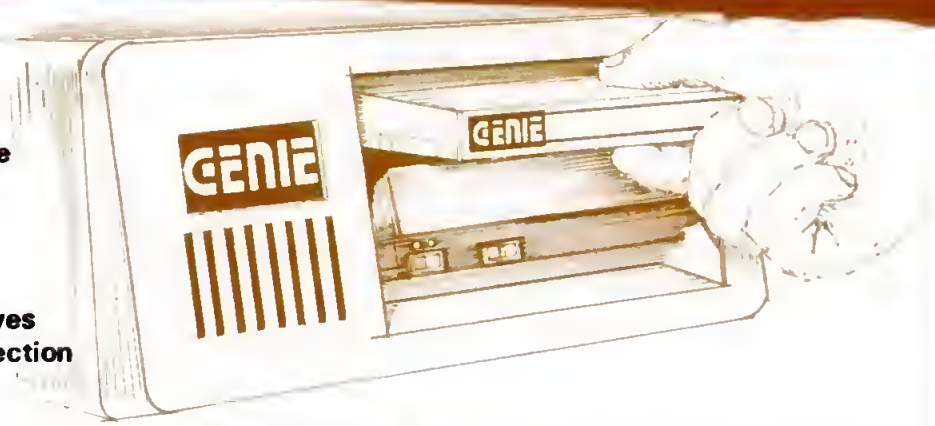

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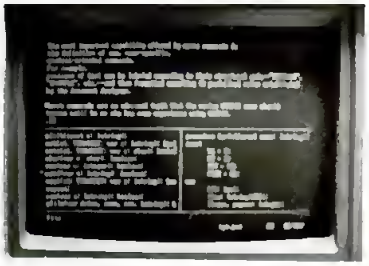

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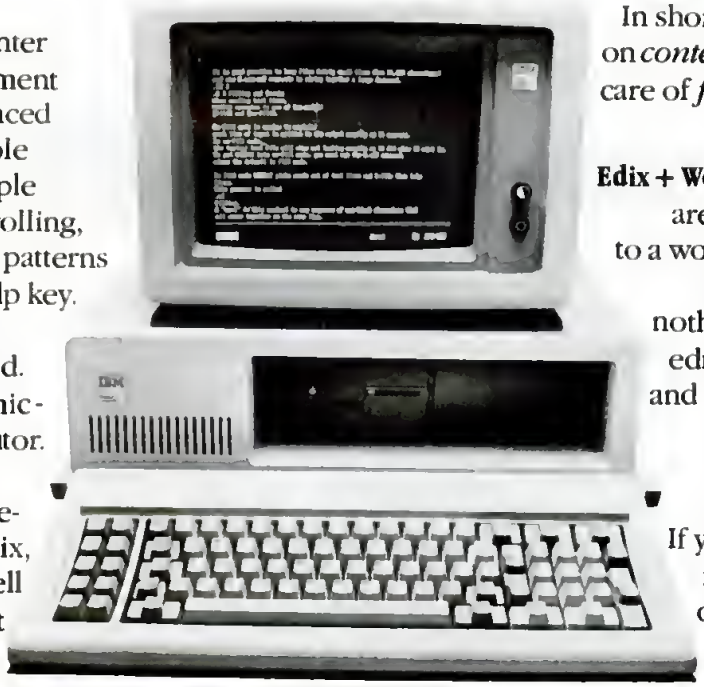

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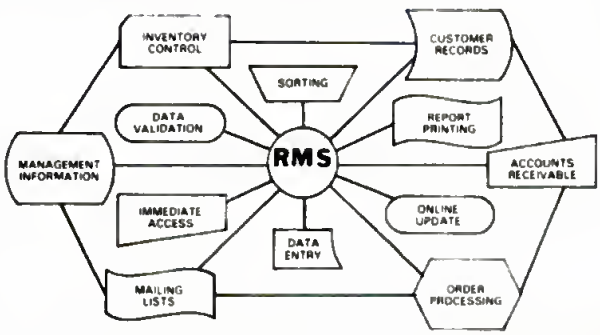

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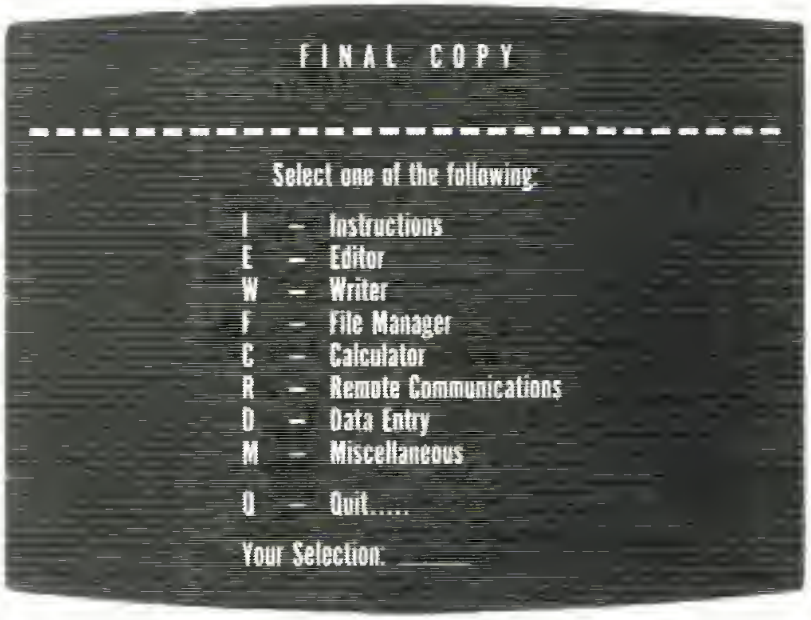

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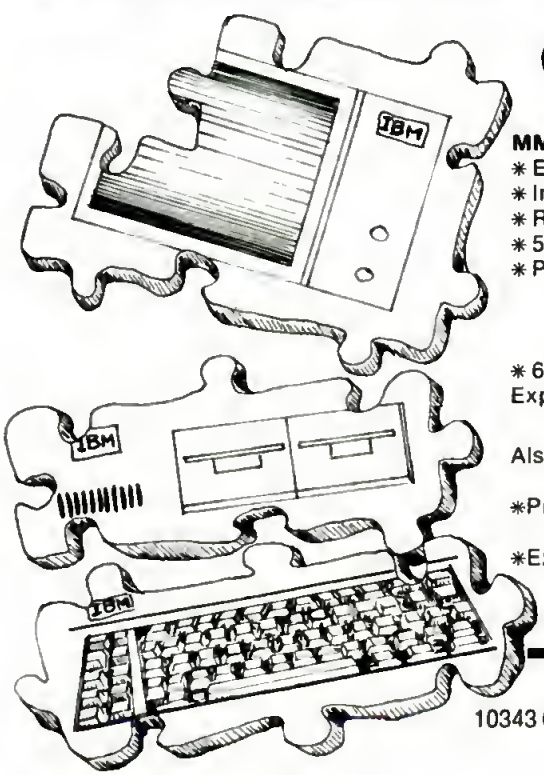

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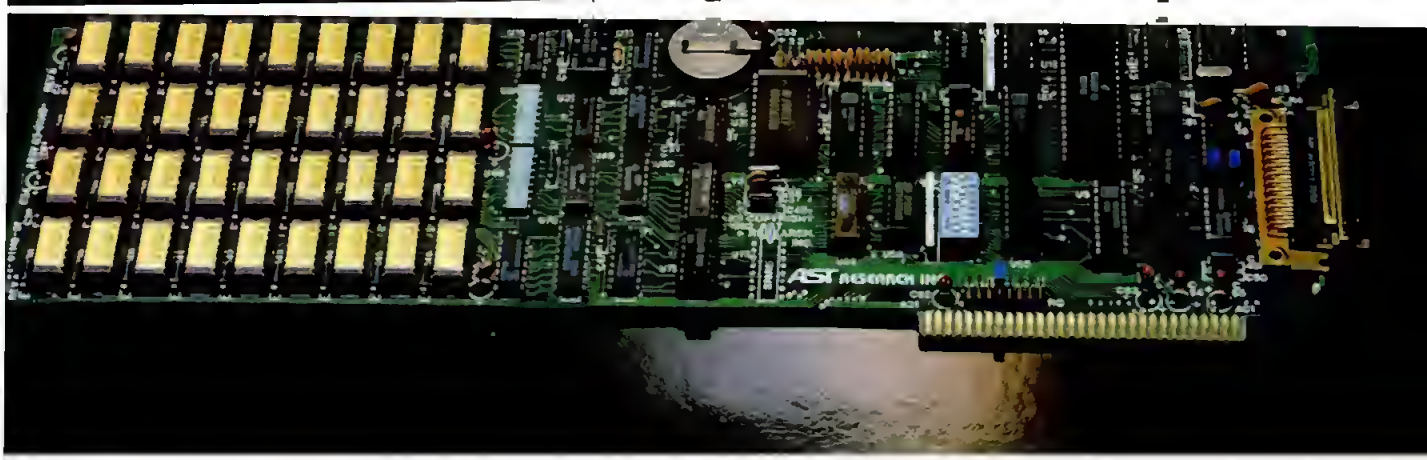

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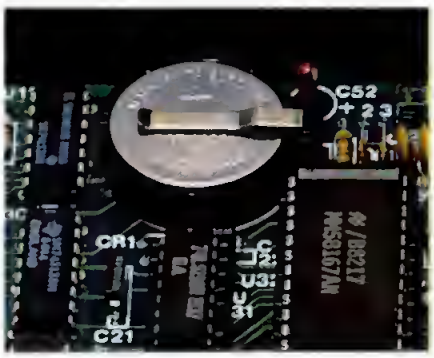

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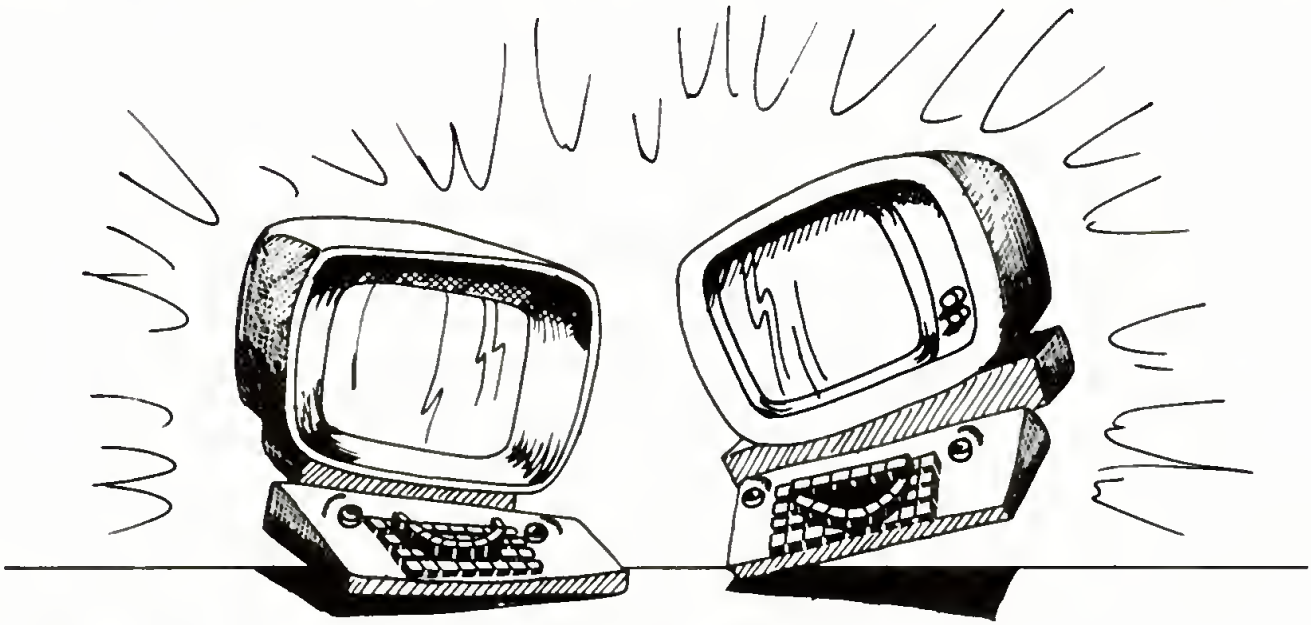

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PC travels to San Bernardino to visit the US Festival, a combination rock festival and computer technology fair.

UCSD Pascal

A review of the operating system by Tom Woteki and Alan Freiden.

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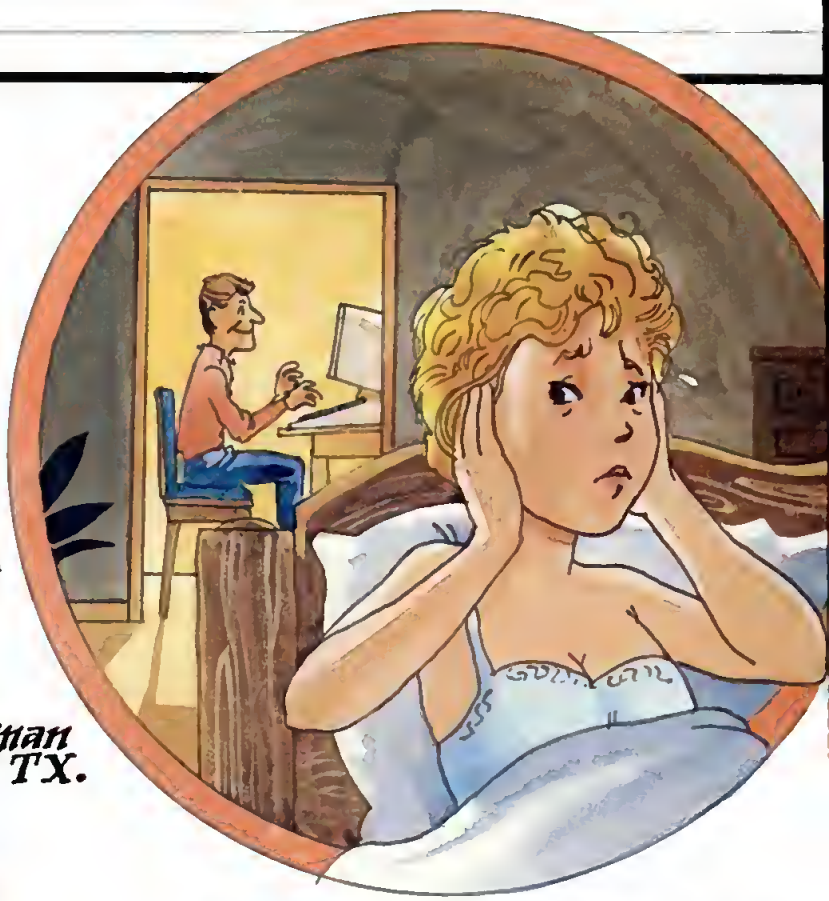

Beep, Beep, Volume Control for P.C. speakers so that when my husband is programming late at night, I won't be kept awake. Also, my husband would like volume controls so he can hear what's happening when he leaves the room.

Margaret J. Hinman
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A simple, user friendly software routine that could be embedded in most programs and would permit the novice user to define special function keys ~ Lee M. Middleman
Menlo Park CA.

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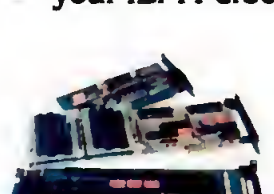

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